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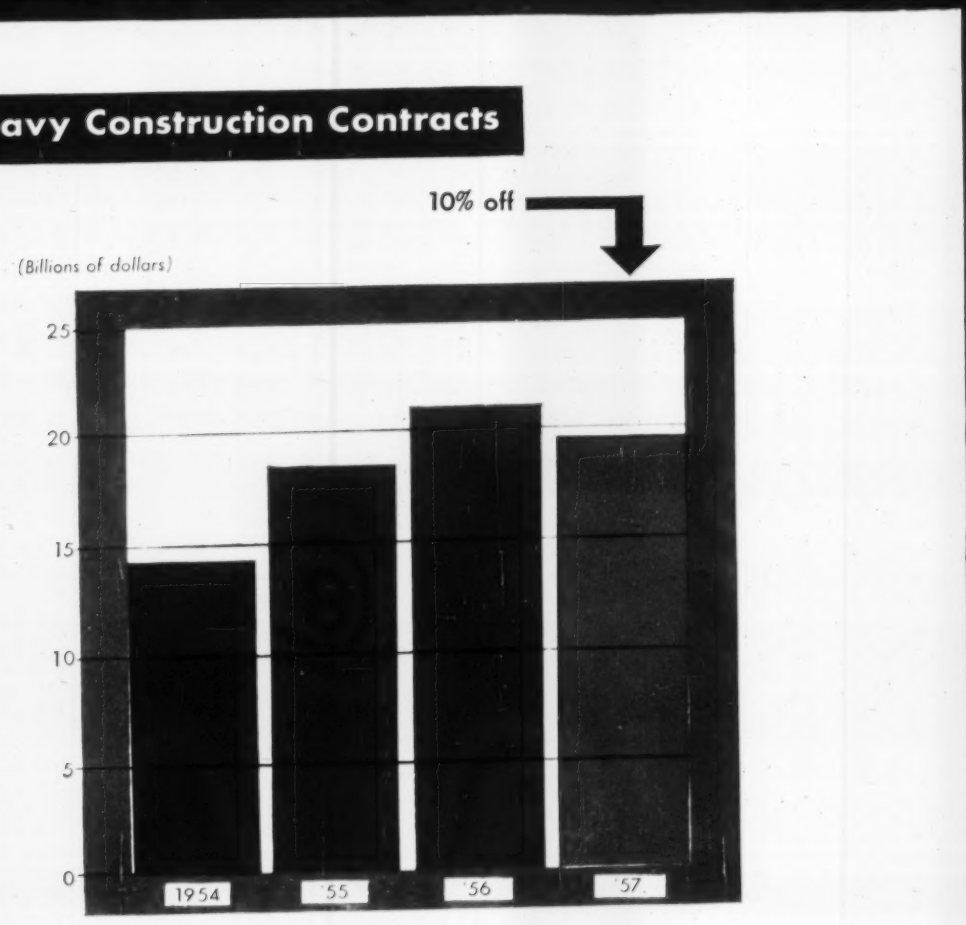

What's behind the drop in contracts? p. 21

A McGRAW-HILL PUBLICATION

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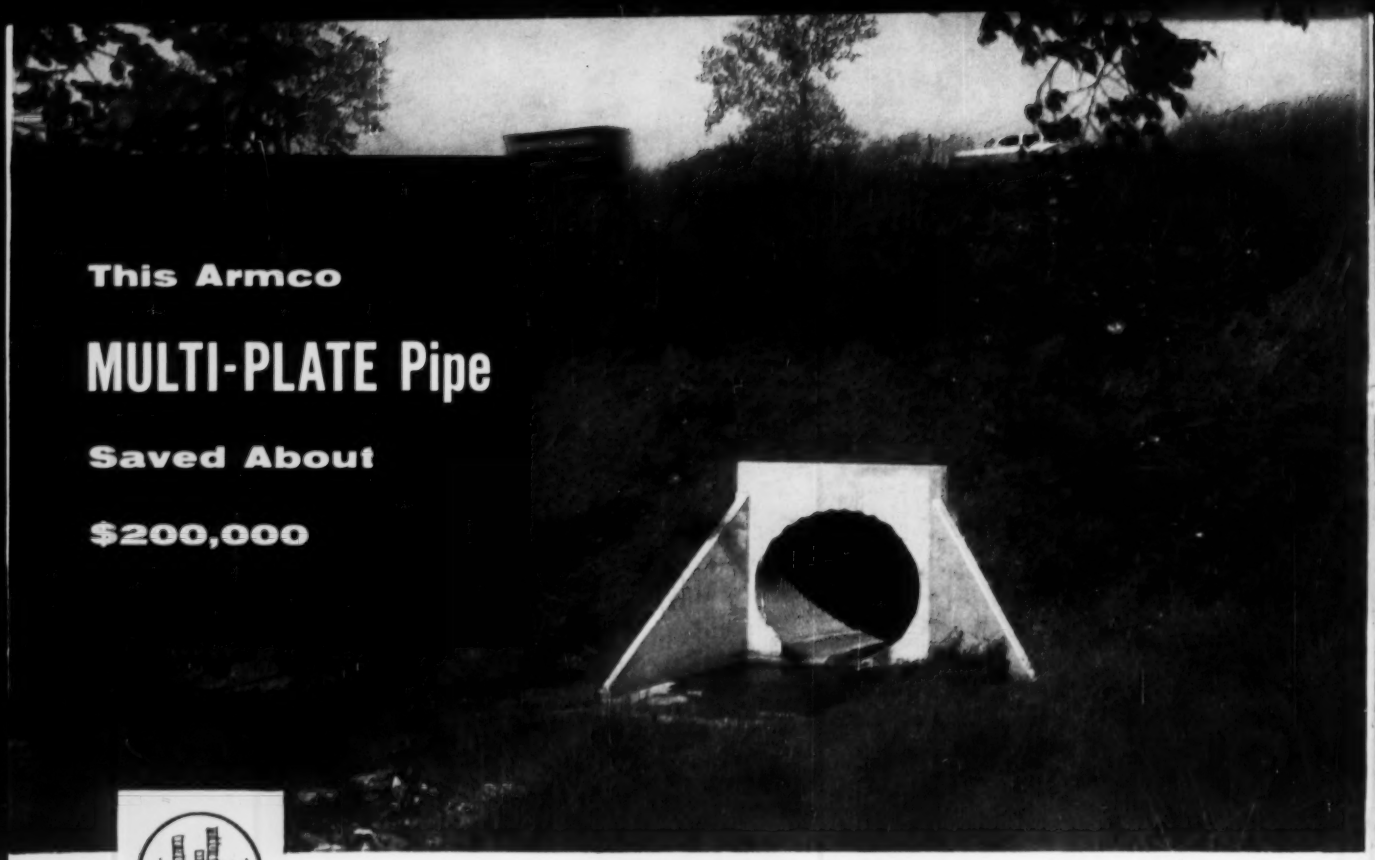


This Armco

MULTI-PLATE Pipe

Saved About

$200,000

Considerable savings were made by installing this Armco MULTI-PLATE Pipe under the Van Brunt Boulevard extension as a drainage structure for a small stream.

In expanding the expressway system of Kansas City, Missouri, the Park Department had the problem of constructing the Van Brunt Boulevard extension across a wide valley. A small stream running through this valley required drainage under the proposed expressway.

By using a combination of earth fill plus a 12-foot-diameter Armco MULTI-PLATE® Pipe instead of a bridging structure, they *saved approximately $200,000!*

The single line of MULTI-PLATE Pipe—216 feet long, provided ample drainage area for the small stream. And the earth fill, 34 feet high, permitted the expressway extension to be constructed on solid ground.

* * *

MULTI-PLATE Pipe is just one of the more than 30 Armco Products for highway, railway, municipal, commercial and industrial applications. All are of metal; have a record for durability; and offer advantages in cost and simplicity of installation. Write for more data. Armco Drainage & Metal Products, Inc., 5257 Curtis St., Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

Here is the Armco MULTI-PLATE Pipe being assembled for installation under the expressway extension in Kansas City, Missouri.

Kansas City Park Department
J. V. Lewis, Superintendent of Parks
Holland Wheeler, Asst. Supt. of Parks and Chief Engineer
Contractor
Geo. Bennett Construction Company

ARMCO®

Armco Construction Products

B.F.Goodrich

All-Nylon Super Traction tires work 5,000 hours, can still be retreaded

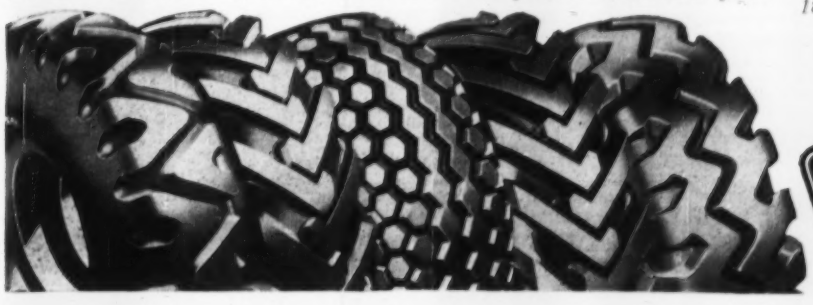
NORTHERN IMPROVEMENT CO. operates 95 vehicles in heavy highway construction work in North and South Dakota, Minnesota and Montana. The scraper above, when loaded, weighs 35 tons, works 60 to 72 hours a week on dirt and gravel roads or no roads at all.

Even under these rugged conditions, B.F.Goodrich *all-nylon* Super Traction tires give 5,000 hours' service before retreading, then give an additional 70% of new-tread service on one retread! One reason for such an exceptional record is the B.F.Goodrich *all-nylon* cord body. Nylon is stronger than ordinary cord materials, withstands double the impact and resists heat blowouts and flex breaks. The *all-nylon* Super Traction body outwears even the extra-thick tread, *can still be retreaded—often over and over.*

B.F.Goodrich builds the Super Traction tread with thick, widely spaced cleats that take a big bite into the soil, give you positive traction. Yet the extra-wide tread gives greater flotation in soft going. Work goes faster—you save money.

Your B.F.Goodrich dealer has a complete line of tires (left) for all types of off-the-road work. And he offers expert, on-the-job tire service. See him today or write: *B.F.Goodrich Tire Co., A Division of The B.F.Goodrich Co., Akron 18, Ohio.*

There's a B.F. Goodrich tire for every construction job



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FIRST IN RUBBER

Your B.F.Goodrich dealer is listed under Tires in the Yellow Pages of your phone book

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HANGERS for decks

SCREEDS for decks

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REINFORCING BAR **SUPPORTS** for steel support

SCREW ANCHORS for false-work support brackets

CONTINUOUS-THREADED **LAGSTUDS** for columns and utility use

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In the roadbuilding field, where time is money, concreting contractors rely on Richmond to save both. Richmond products are often a major factor in the profit and loss picture.

You buy 46 years' experience when you specify Richmond products. The current handbook fully describes the entire Richmond line. Write for it, to: RICHMOND SCREW ANCHOR COMPANY, INC., 816 Liberty Avenue, Brooklyn 8, New York or 315 South Fourth Street, St. Joseph, Mo.

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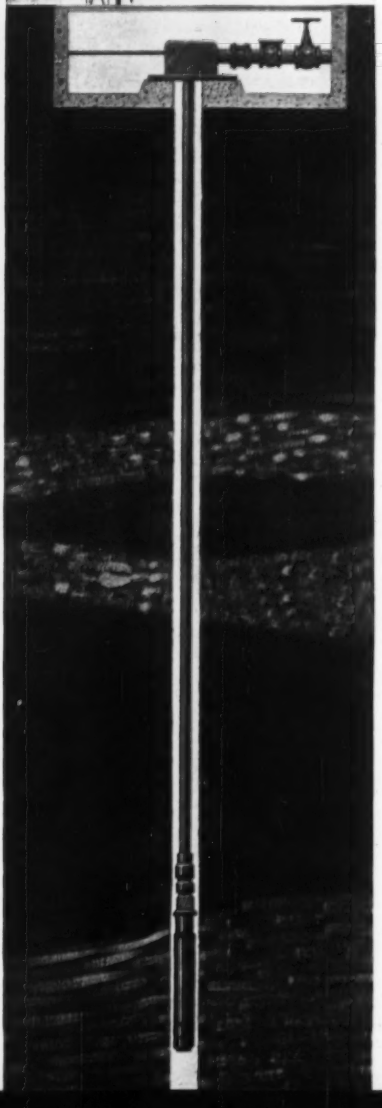
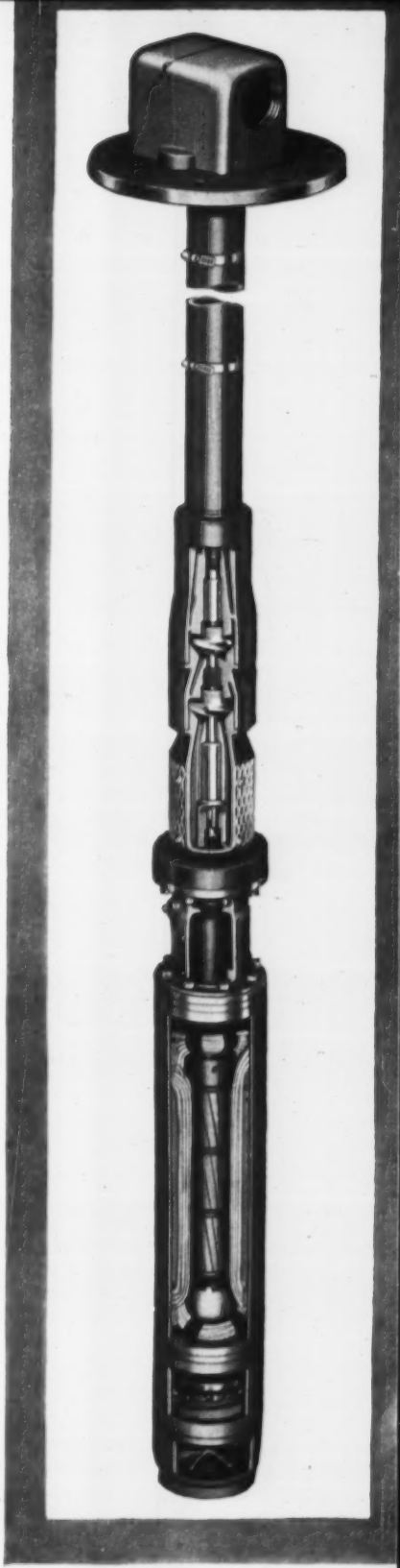
Now you can bury your pumping problems





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Water-Lubricated Submersible Pump

Now you can have all the advantages of a submersible pump, plus time- and performance-tested Fairbanks-Morse features.

Fairbanks-Morse submersible pumps permit well location anywhere that a well can be drilled. No unsightly installations, no costly pump housing. Nothing—absolutely nothing—need show above ground. These pumps submerged in the well below water level are practically soundless and require no line shafts, packing boxes or lubrication devices. Hence, wearing parts needing maintenance are reduced to a minimum. A single moving assembly does all the work.

Installation is faster and more economical. The Fairbanks-Morse motor, with lifetime Copperspun rotor cooled by water and lubricated by water, gives full motor output. The well-known Fairbanks-Morse or Pomona pump bowls are combined with these wet stator motors to produce unbeatable pumping units covering a wide range of requirements as to volume, pressure, and setting depth.

For industry or community service you can place your water service trust in the F-M submersible. Contact your Fairbanks-Morse Sales Engineer and ask him for Bulletin 6910 on this time-proved submersible pump, or write today to Fairbanks, Morse & Co., Dept. ENR-7-4 600 S. Michigan Avenue, Chicago 5, Illinois.

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a name worth remembering when you want the BEST

PUMPS • SCALES • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY
RAIL CARS • HOME WATER SERVICE EQUIPMENT • MOWERS • MAGNETOS

Digs up to 25 FEET per minute

Notice the accurate grade you get with this Parsons 150 wheel-type Trenchliner

For pipeline, drainage, irrigation and utility trenching, Parsons 150 Trenchliner brings you big work capacity and precision grading accuracy. It digs from 12 inches to 25 lineal feet of trench per minute. 30 digging feeds assure maximum trench production at every depth, width, and in all soil conditions. Cutting widths range from 16 to 26 inches. Maximum digging depth is 5¾ feet.

Hydraulic wheel-hoist gives smooth, positive control of trench depth. A hydraulic ram on vertical mast raises and lowers the digging wheel — maintains close grade tolerance, an important advantage on any trenching job. A separate hydraulic ram tilts the mast — balances weight of wheel forward on the machine when traveling, loading or unloading on trailer.

For digging dry or wet materials, quick-change buckets on the Parsons 150 Trenchliner are available with gumbo lips, or self-sharpening reversible "Tap-In" teeth. Shiftable, reversible belt conveyor gives controlled discharge, places spoil bank on either side of trench. Tile-laying box and chute (optional) save time and labor on drainage jobs. To suit varying job conditions, this 150 Trenchliner is also available with 16-inch, lug-type crawlers, or 12-inch crawlers with street shoes. Your Parsons distributor has more information that will interest you. See him soon, or write for bulletin.

. . . . *Send to:* **PARSONS CO.,** **Newton, Iowa** . . . .

for bulletin on 150 wheel-type Trenchliner

NAME_____

COMPANY_____

STREET_____

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PARSONS

(Koehring Subsidiary)

PARSONS TRENCHLINERS®

CP534

OTHER SIZES of Parsons Trenchliners include wheel and ladder types, crawler-mounted, and utility-size rubber-tired Trenchmobile.®

Bearings packed only once a year on this 4-PM mixer

For more work-time, less maintenance, check this Kwik-Mix 4-PM plaster-mortar mixer. There is no daily lubrication required on the antifriction paddle-shaft bearings. They are packed in grease, multiple sealed. You'll also like the simple de-clutching arrangement on V-belt drive, 4 self-cleaning blades, optional rubber tips. Has 38-inch charging height, 29-inch width, all-welded frame. Kwik-Mix 6-PM, 9-PM sizes also available.

KWIK-MIX • Port Washington, Wis.
(Koehring Subsidiary)

Portable batch plant or cement transfer plant

Johnson Elevating Charger unloads cement from box cars or hopper-bottom cars, and loads into trucks. Charger has a 1000-lb. cement weigh batcher, hung under a 33-bbl. overhead storage hopper. Or, to charge dual-batch trucks, two 1000-lb. batchers can be used. It's easily changed to cement transfer plant by removing batchers, cone, and bolting a 50-bbl. extension section to the upper hopper. See your Johnson distributor.

C. S. JOHNSON • Champaign, Ill.
(Koehring Subsidiary)

20 feet deep with Koehring ¾-yd. 305

On hoe applications, Koehring 305 digs 20 feet below grade, and up to 40 inches wide over side-cutters. ¾-yard dipper pulls up close to the boom, avoids spillage. There's better than 12½-foot clearance at beginning of dump for loading into trucks. It's a versatile, big-capacity machine — readily converts to ¾-yd. shovel, ¾-yd. to 1-yd. clamshell or dragline, and 15-ton crane on crawlers. Truck-mounted 305 has 25-ton lift capacity.

KOEHRING Company
Milwaukee 16, Wis. A61

How concrete-smashing

PRY-ACTION BREAK

gets you jobs other

Contractor Leon Sumler, Jackson, Tennessee, applies exclusive triple-power pry-action break-out with his TD-9 Four-In-One Skid-Shovel. And without delay, he breaks-up, and yanks-up an old filling station's concrete slab and footings!

This new 3-yd. TD-18 Four-In-One Skid-Shovel proved able to do as much as 3 power shovels and a dragline—excavating and loading up to 1,700 lineal feet of old concrete pavement daily—operating for Henry E. Berghuis, Prinsberg, Minn.

Street-widening and regrading calls for removing old concrete pavement—which the new TD-9 Skid-Shovel is loading out at 600 cu yds per day! Dennis Widmer, Portland, Oregon, owns this outfit with the job-getting break-out power!

-OUT... rigs can't do!

Pry-action break-out force ranges from 12,000 lbs. on the International Drott TD-6 Four-In-One Skid-Shovel—to 27,000 lbs. on the TD-18 model. For special applications like land-clearing, the TD-18 model can be equipped with larger hydraulic cylinders to develop 54,000 lbs. of break-out!

Patented and exclusive International Drott pry-over-shoe break-out action gives you *up to six times as much excavating power* as ordinary front-end loaders can deliver! Only an International Drott gives you this multiplied force of the scientific lever principle acting over big skid-shoes, and teamed with ground-level bucket roll-back. *No other loader even has skid-shoes!*

Only International Drott-developed reverse cylinder action produces the tremendous hydraulic power for pry-action break-out. And this pry-action principle shunts shock-stresses directly into the ground—so they can't maul loader or tractor.

Measure the job-getting, capacity-adding advantages of exclusive triple-power, pry-action break-out. Note how exclusive parallelogram raise action keeps the bucket level, all the way up—reduces spillage—increases your daily yardage up to 18%! Prove that exclusive, shock-swallowing Hydro-Spring protects equipment, adds operator comfort. And try the exclusive International Drott Four-In-One that *gives you four-machine utility* for one moderate investment—in your choice of four sizes, one-yard to three-yard capacity. See your International Drott Construction Equipment Distributor for a demonstration.

Thirty-six times as fast as 3 men and a jack-hammer could do it—this TD-14 *broke-up, dug-out, and loaded* 180 lineal feet of old one-by-four-foot concrete wall, in only 4 hours! Owner: Anderson Trucking and Excavating, Inc. Buffalo, N. Y.

A tough oak tree with 22-inch trunk is uprooted with the tremendous pry-action break-out—applied by TD-14 using grubber blade attachment, instead of bucket. Owner Lester H. Davis, Bennington, Vermont, is clearing farm land.

International Harvester Company, Chicago 1, Illinois
Drott Manufacturing Corp., Milwaukee 15, Wisconsin

INTERNATIONAL® DROTT®

How a cost-beating, can "unbind"

A TD-24 starts and gets "ready to run," seconds-fast. Morning, noon, or any other time you shut down the TD-24's diesel engine, you restart in seconds—and save yard-moving, wage-costing minutes! Exclusive International gasoline-conversion diesel starting does it—and the combustion-heated engine is ready to run as a diesel, without "gumming the works" with raw fuel!

TD-24 Cerametallic engine clutch eliminates time loss and upkeep cost of temperature-sensitive, "service-nervous" type clutches! You get the simplicity of long-familiar clutch design. You get the operating ease, temperature-immunity, and power-transfer efficiency of International Cerametallic facings. You get the instant readiness to operate perfectly when cold—plus heat-defiance for clutch-mauling jobs like 'round-the-clock shuttle-dozing.

TD-24 on-the-go shifting is a "double-barreled" cycle-speeder. The exclusive TD-24 two-speed planetary system gives instant, stall-preventing Hi-Lo shifting without declutching, in either the Torque-Converter or Gear-Drive models. And in the Gear-Drive model, you get two-direction "no-stop" shifting with exclusive synchromesh transmission.

TD-24 exclusive Planet Power steering eliminates load-limiting "dead-track drag"—gives full-time "live" profit power on both tracks. It's more than total engine hp or weight that

Announcing VM VALUE MEASURED

The exclusive equipment buying plan that value-measures used machinery and its components before you buy!

See VM buys now at your International Construction Equipment Distributor!

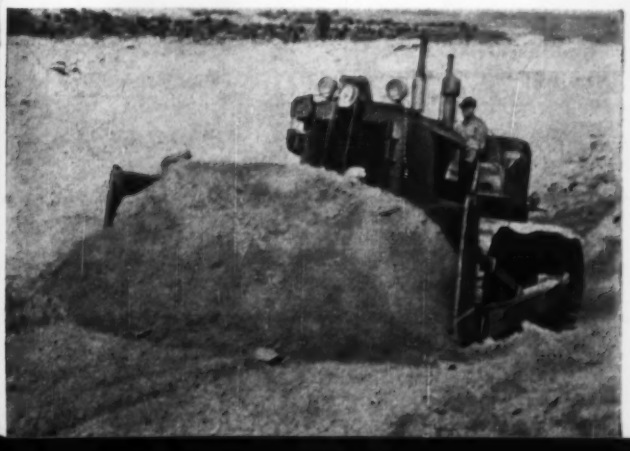
cycle-speeding TD-24 your profit squeeze!

Flores and Perry, Laton, California, depend upon three International "75" Payscraper® units and a TD-24 Torque-Converter crawler—to fulfill their 8-mile grade-raising subcontract, on Central Valley Highway south of Hanford. TD-24 push helps boil-in 20 cu yd heap-loads, in only 42 seconds!

counts—watch how "dead-track drag" limits any king-sized steering-clutch crawler to what it can handle on turns. Then watch how years-proved Planet Power steering gives the TD-24 full-time, both-track power—to pull or push extra-big loads on the turns or straight ahead, uphill or down!

TD-24 control ease puts record daily production at your operator's fingertips. Cool and safe flush-deck design, control-tower vision, and reach-easy fingertip controls all increase operator comfort and performance. Never before has big crawler work-power been so load-responsive—or record work-production so easy to achieve!

Prove positively your profit-margin widens—with geared-and-steered-for-action TD-24 power giving you the success-margin of push or pull! See your International Construction Equipment Distributor for a TD-24 demonstration!

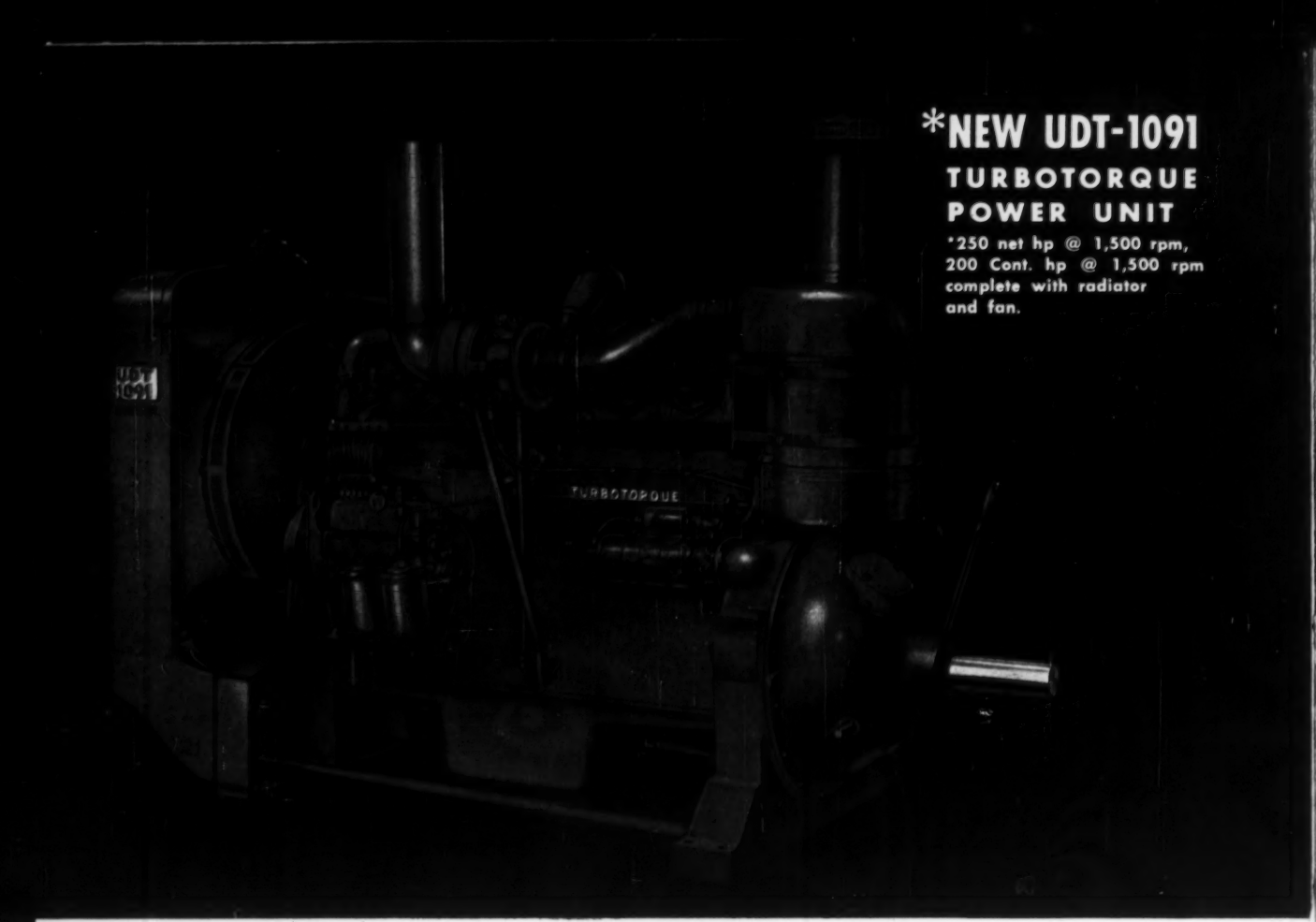


"The TD-24's 2-speed track steering holds you in 'dozing position with no slide-slip or power loss in turning," states Operator Jack Campbell for Owner J. H. Marshall, Clovis, New Mexico. The Marshall TD-24 is shown dozing tough caliche rock for road surfacing.

INTERNATIONAL® CONSTRUCTION EQUIPMENT

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE: Crawler and Wheel Tractors . . . Self-Propelled Scrapers . . . Crawler and Rubber-Tired Loaders . . . Off-Highway Haulers . . . Diesel and Carbureted Engines . . . Motor Trucks . . . Farm Tractors and Equipment.



New 250 hp *Turbotorque International . . . power cost-cutter for your big machines

Now—lower cost, more dependable power for your big driven machines—the new 250 hp Turbotorque International UDT-1091 power unit. And that's on-the-job shaft horsepower—not the inflated laboratory variety against which big deductions must be made for fan, radiator, accessories, plus altitude and air temperature.

This instantly available 250 hp, along with an extra-large counterbalanced crankshaft and heavy flywheel, carries you through peak loads that stall lighter weight engines. As a result, you can make full use of the continuous duty 200 hp rating for more production at lower cost.

The UDT-1091 has all the features that have made the 200 hp naturally aspirated UD-1091 a favorite diesel power source. In addition, it has a water-cooled oil temperature stabilizer as regular equipment and a radiator with greatly increased cooling capacity. The efficient exhaust-gas-driven AiResearch turbocharger moves 60% more air through the big 14-in. diameter air cleaner. This air is packed into the cylinders for minimum fuel consumption and higher power with lower exhaust gas temperatures.

Get the full story on the new UDT-1091 and the other 17 International high-output engines from your nearby International Power Unit Distributor or Dealer. His parts and service support is as dependable as the engines he sells! Call him soon.

INTERNATIONAL®

International Harvester Company
180 North Michigan Ave., Chicago 1, Ill.

CONSTRUCTION EQUIPMENT

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Reader Comment

Organized Labor Helps All

SIR—Following is a proposition which I regard as both legitimate and worthy of labor's highest aim:

"A trade union is a democratic organization dedicated to the proposition that a healthy social body is dependent upon a balanced expanding economy in which production is balanced by consumption through a just and equitable division of the profits derived from the labor of all who are engaged in the production and distribution of goods and services".

The essential difference between the proposition as stated above and the proposition as presented in the article "New Codes for Labor" (ENR June 6, p. 179) lies in a recognition of organized labor's far reaching influence in elevating the standard of living of our society as a whole. Through labor's efforts to ever maintain a proper balance between production and consumption for the benefit of their membership, have the benefits been extended to all.

Too, in this statement of the proposition may be discerned the truth that what helps one helps all and that what hurts one hurts all.

As an engineer, belonging to no organized group, I must acknowledge a debt of gratitude to organized labor in having done much to elevate the standard of living for me.

I am not oblivious to the mistakes organized labor has made, and continues to make, but, sometimes a mistake can serve a good purpose.

G. R. HARRINGTON
Lacy, Atherton & Davis
Wilkes-Barre, Pa.

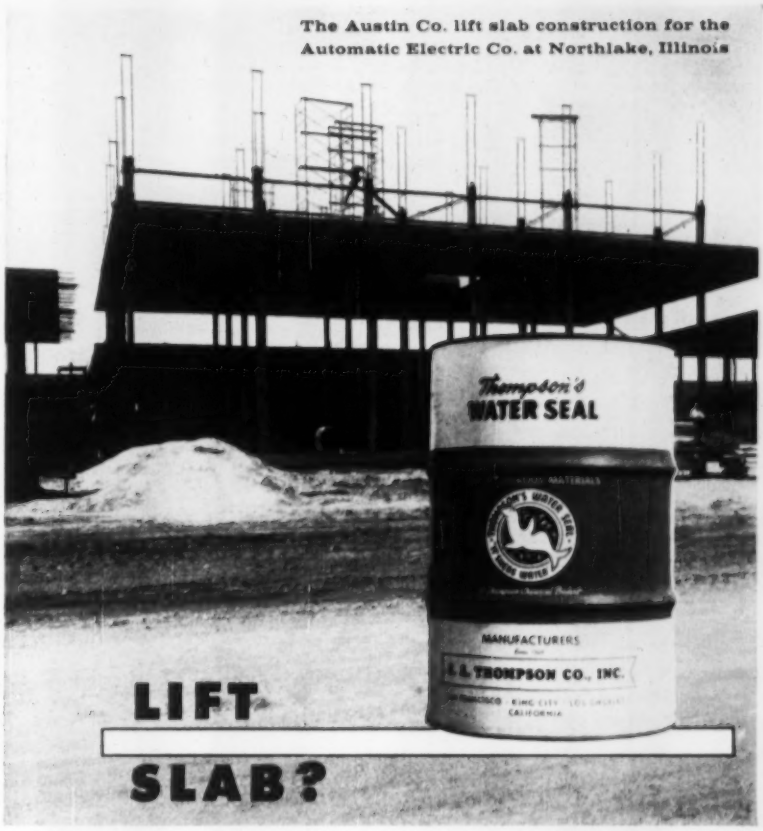
On Hiring Students

SIR—Your editorial in the issue of May 30, "Summer Jobs for Students", is most interesting and should receive high commendation.

Without prior planning, employment of summer students offers difficulties. Our engineering staff is small, so we can't handle many summer employees; but for the past three or four years we have arranged for two students for summer work. We believe that

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

The Austin Co. lift slab construction for the Automatic Electric Co. at Northlake, Illinois



here's the West's Answer
to an **Eastern Concrete** Question!

What curing and bond breaking agent can deliver hard, clean surfaces?

Thompson's Water Seal proved to be the answer for a well known engineering and construction firm, The Austin Company—and for their client, The Automatic Electric Co. This Northlake, Illinois job involved 350,000 sq. ft. (1173 ft. long) of lift slab plus a substantial amount of precast panel construction. Thompson's Water Seal was used throughout with satisfactory results for all concerned.

If you want *one* sure curing, separating and form-sealing method, it will pay you to specify Thompson's Water Seal for all types of concrete construction.

THOMPSON'S (deep penetrating) WATER SEAL is Nationally distributed by
THE PITTSBURGH PLATE GLASS COMPANY

Thompson's
MANUFACTURERS OF
FINE PROTECTIVE
CHEMICALS SINCE 1929

For complete specifications, write for 1957 booklet

E. A. THOMPSON CO., INC. • MERCHANDISE MART • SAN FRANCISCO 3, CALIF.
San Francisco • Los Angeles • San Diego • Portland • Seattle • Dallas
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¾ yard P&H 255A crawler machine quick-loading a ten-wheeler at Portland, Maine

3/4 yd. shovel has a mighty appetite

P&H 255A–first ¾ yd. power shovel--still the leader

P&H was first to introduce a ¾ yard shovel with internal combustion engine and today the P&H 255A *continues* to lead in profitable performance.

Contractors agree that the 255A with its dependable day-in and day-out production can dig more and lift more—faster and cheaper. In fact, many contractors agree that performance of P&H equipment is the big factor in determining their profits.

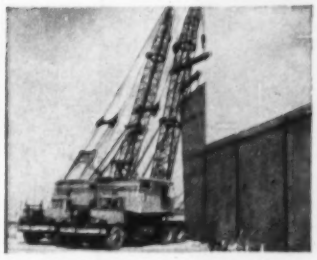
P&H profitable performance comes from a combination of features that are found only in P&H quality equipment. In the 255A you get famous P&H stability through better weight distribution and a low vertical center of gravity. You get smooth, fast, lively swings on the mammoth P&H live roller circle. P&H designed double adjustable hook rollers assure "even keel" swings. The 255A makes maximum use of alloy steel.

Add to these features the fact that equipped with a P&H Diesel Engine with its greater torque you'll get much greater production than with a gas engine. Yes!—this ¾ yard excavator has the mightiest appetite for work—at a potential profit.

Harnischfeger Corporation
Construction & Mining Division
Milwaukee 46, Wisconsin

THE P&H LINE Truck Cranes: 8, 10, 15, 20, 25, 30, 35 and 45 tons
Shovels: ⅛, ¾, 1⅛, 1¼, 2½, and 3½ yards

Across the country P&H machines lead the field in power, speed, flexibility, and profitable performance



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For handling loads up to 35 tons profitably there is the P&H 555A-TC. Here are Reliance Equipment's two 555A-TC units double lifting a precast concrete panel in the Vail Field Industrial Area, Los Angeles.

LOUISIANA
In the 1¼ yard class, Schwartz Supply Co. profits from the lively swings and dependable performance of the P&H 655B. It is shown unloading material for their concrete mixing plant near New Orleans airport.

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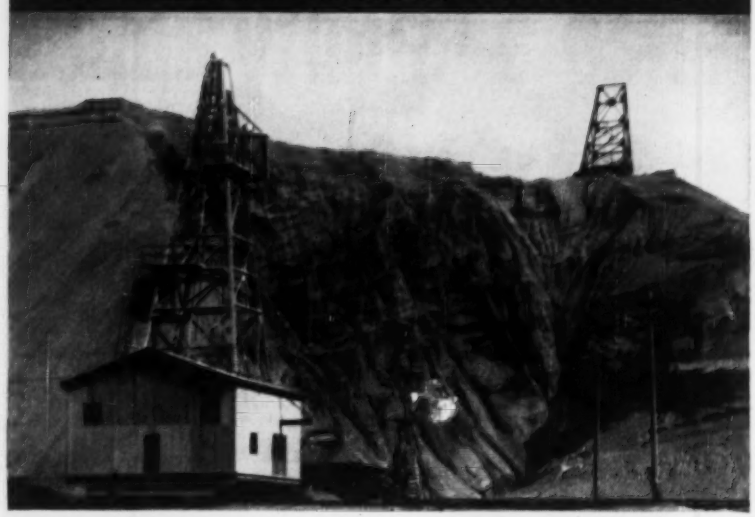

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Because in most cases it is cheaper to drag material than it is to lift and transport it, *they give you the lowest cost per cu. yd. handled.*

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The Crescent delivers to a portable field hopper from which belt conveyors transport the material to the plant.

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. . . Reader Comment

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We usually employ local engineering students or we get them through recommendations from heads of engineering colleges in the state.

Thanks for plugging summer student employment. Those young men are our future engineers.

RICHARD C. CROOK
The Zia Company
Los Alamos, N. M.

Channel Tunnel

SIR: The editorial on the Channel Tunnel (ENR June 6, 1957, p. 196) certainly will give "engineers everywhere a worthwhile topic of conversation." It was interesting to our office and I am passing on copies of it to our people in London and Paris.

ROBERT O. SWAIN
Executive Director
International Road Federation
Washington, D. C.

Concrete Without Cement?

SIR—I just noticed in ENR Jan. 17, p. 10, that A. R. Waters of Carter-Waters Corp., Kansas City, Mo., has made a good point with his comments regarding concrete being referred to as cement. In his letter, however, Mr. Waters makes a mistake just as bad as the one he criticizes.

His statement, ". . . 'cement' is an ingredient of concrete . . .," is not entirely true. Cement is an ingredient of portland cement concrete, but don't forget there is another kind of concrete—namely, asphaltic concrete which contains no "cement."

J. A. WOODRUFF
Airfields Branch
Office, Chief of Engineers
Washington, D. C.

CALENDAR

World Conference on Prestressed Concrete, Fairmont Hotel, San Francisco, Calif., July 29-August 2.

Hydraulics Div., American Society of Civil Engineers, Kresge Auditorium, Massachusetts Institute of Technology, Cambridge, Mass., Aug. 26-28.

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ENGINEERING NEWS-RECORD

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Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Price 50¢ each copy except Annual Cost Issue. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

STEEL PRICES UP—Cost-conscious contractors watched a now familiar pattern repeat itself this week. The major steel producers, under an agreement worked out last year, handed out higher wage and fringe benefits to some 700,000 steelworkers—and handed out higher price lists to construction and other customers. Concrete reinforcing bars are up (effective July 1) some $7 a ton. Standard structural shapes are up $5.50 a ton at the mill; high strength structurals are up as much as $8 a ton more. Sheet piling now costs $6.50 a ton more and plates, $5. Since many steelworkers in the fabricators' shops share in the pay boosts, contractors will find the cost of steel erected at the job site much more costly than the mill prices indicate. The latest round of price increases will put new pressure on costs, which have been hitting new highs in recent months, probably will set some more records before the year ends.

RAINMAKERS' SCORE: 14%—Cloud-seeding may increase natural rainfall by as much as 14%—but it all depends on the terrain. This figure is for hilly or mountainous country such as along the Pacific Coast; the effect is insignificant over flat inland country. These are findings of the Advisory Committee on Weather Control set up in 1953 and now issuing a series of reports that could be its last (Congress denied funds for a planned final year's work). Storm studiers conclude cloud seeding with silver iodide or dry ice cannot end droughts or cause them—although some redistribution of rainfall is an admitted possibility. Records of 386 seeded storms were compared to more than 5,000 unseeded storms in the same areas.

DON'T WALK ON FORMBOARDS—Two deaths and a number of serious injuries incurred by workmen falling through fragile formboards have prompted action by California's Department of Industrial Relations and the construction section committee of the Governor's Industrial Safety Conference. When a concrete or gypsum roof is to be cast in place on form boards of glass fiber, gypsum or other lightweight material, the state recommends: (1) use walk boards, (2) stay off T-bars, (3) apply wire mesh immediately after placing formboards, (4) have manufacturers stamp warnings on formboards, (5) erect warning signs and barricades, and (6) instruct workmen.

ROAD CREW FOR RELICS—Nebraska's State Historical Society counted a new ally last week—the State Highway Department. Under a new directive, the Highway Department will furnish the historical group with plans for every proposed road improvement job, then will instruct its crews to excercise particular care so that "historical items such as ruins, sites, artifacts, fossils, or . . . objects of antiquity having . . . significant historical value . . ." shall not be needlessly destroyed.

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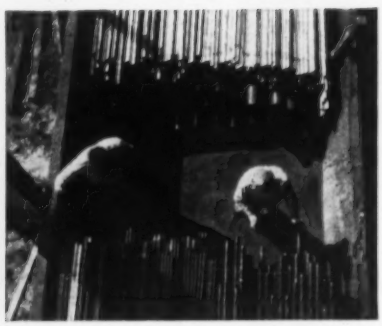

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WASHINGTON OBSERVER

- **New plan for jurisdictional settlements**
- **Productivity report fuels fuss over prices**
- **New cuts ahead for military projects**
- **Cut-back in Davis-Bacon enforcement**

● **A new plan for settling labor's jurisdictional disputes**—the first such agreement between the AFL-CIO Building Trades and Industrial Union Departments—is due soon for a trial run. The basic idea: Settle the job fights between craft and industrial unions according to past practice in the territory or plant.

The plan is for a two-man team of troubleshooters—one member from each department—to travel to the scene of the dispute. They'll have first try at settlement. If that fails, the fight goes to an AFI-CIO headquarters committee. The teams, once appointed, will be stationed in the East, Midwest and West. But, there is no decision on the final way to settlement.

—

● **A new report on productivity will add to the fight over steel prices that's** brewing in Washington.

A new figure-crammed report on prices, profits and wages has been published by the Joint Committee on the Economic Report, the result of 18 months of work.

The report backs the union argument that steel prices have risen more than needed to cover wage increases. But on the management side, it also shows that payroll cost per unit of output did rise in 1956.

The new report will be used during hearings on administered prices in steel and other industries already scheduled in the Senate.

—

● **Spending on military construction will be cut—eventually**—by President Eisenhower's latest trimming of money the Administration is asking to finance such work for fiscal 1958 just beginning.

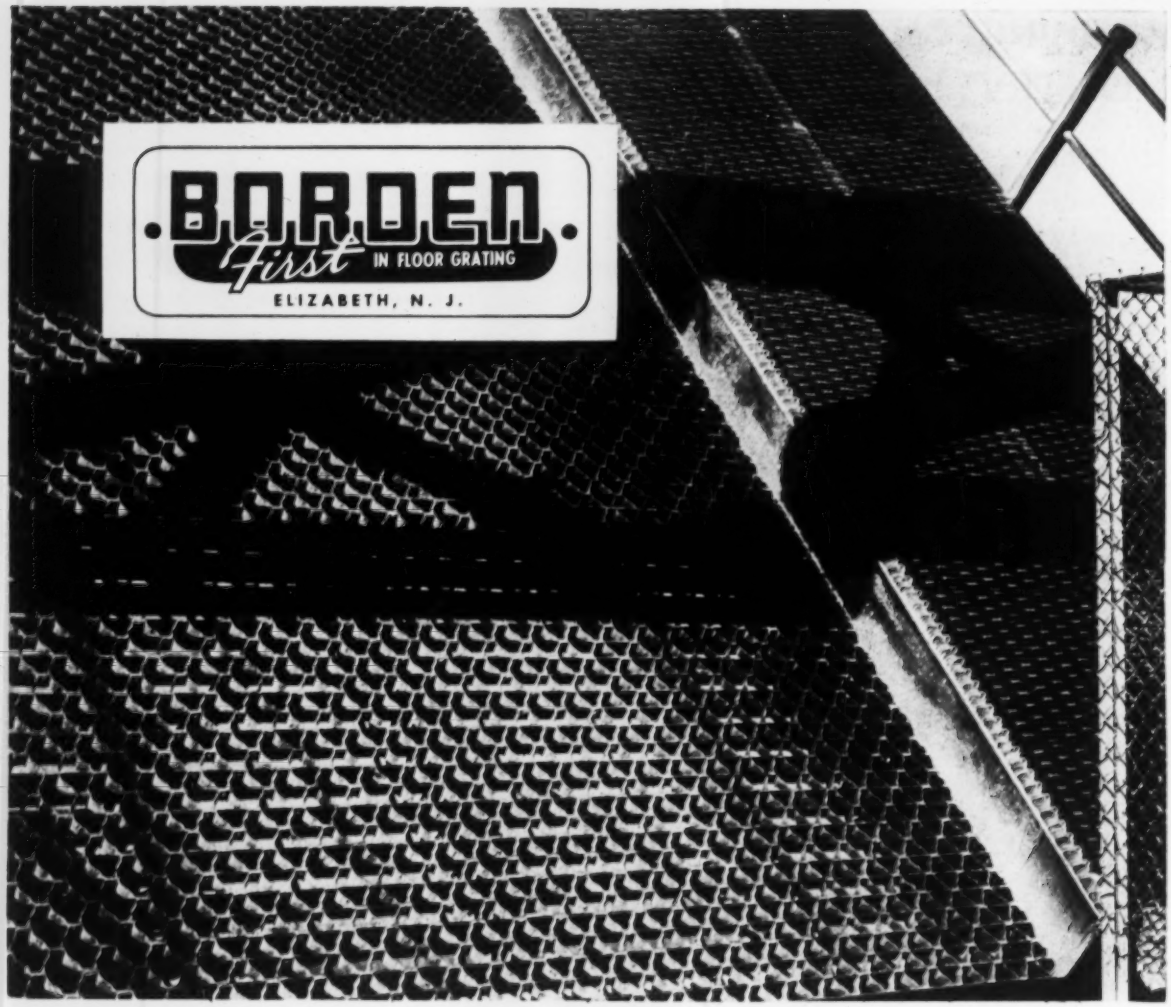
The President is now asking $456 million less than the $2.1 billion figure projected in his January budget. This reduction won't hit spending much during the coming 12 months, but it does mean fewer contract awards.

A similar cut-back in new starts on military projects shows in the companion military authorization bill. It started out at around $2.1 billion, but was cut by around $600 million before being submitted to Congress.

—

● **Davis-Bacon wage enforcement will be financed from the highway trust fund** under a compromise adopted last week by a House-Senate conference committee. But the amount will be $200,000 instead of the $365,000 originally sought. The department had $300,000 for this purpose last year.

A stricter check on state handling of interstate highway construction is due from a new "project examination division" of the Bureau of Public Roads. Frank Alexander, chief BPR accountant, is on a three week field trip to determine how the new division will operate.



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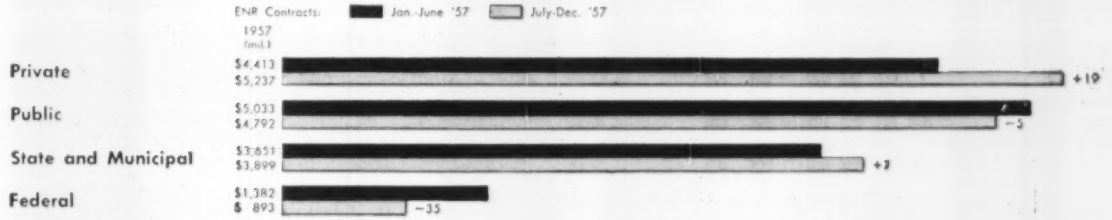
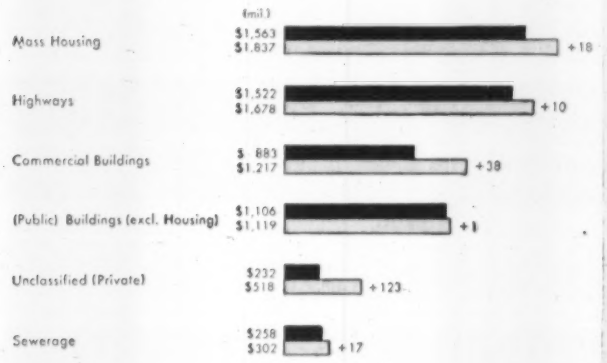
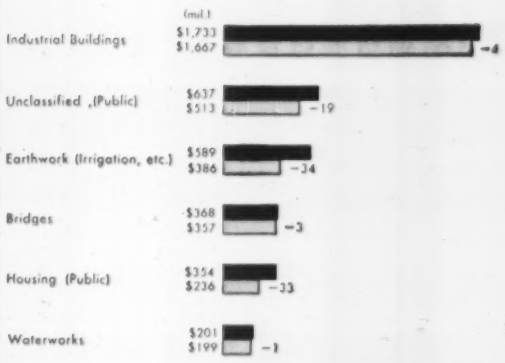
Private Construction Will Take the Lead in the Second Half of '57...



These will move ahead in the second half...



These will lag...



© Engineering News-Record

But, it adds up to . . .

A 10% Drop in Awards This Year

This year's dollar volume of new business signed up by heavy construction contractors will fall 10% short of record 1956, a revised ENGINEERING NEWS-RECORD forecast indicated this week.

At the end of the first six months of this year, heavy construction contracts as reported by ENGINEERING NEWS-RECORD and CONSTRUCTION DAILY, trailed 1956 by 17%. However, an upturn in contract award activity in the second half is expected to erase part of this deficit.

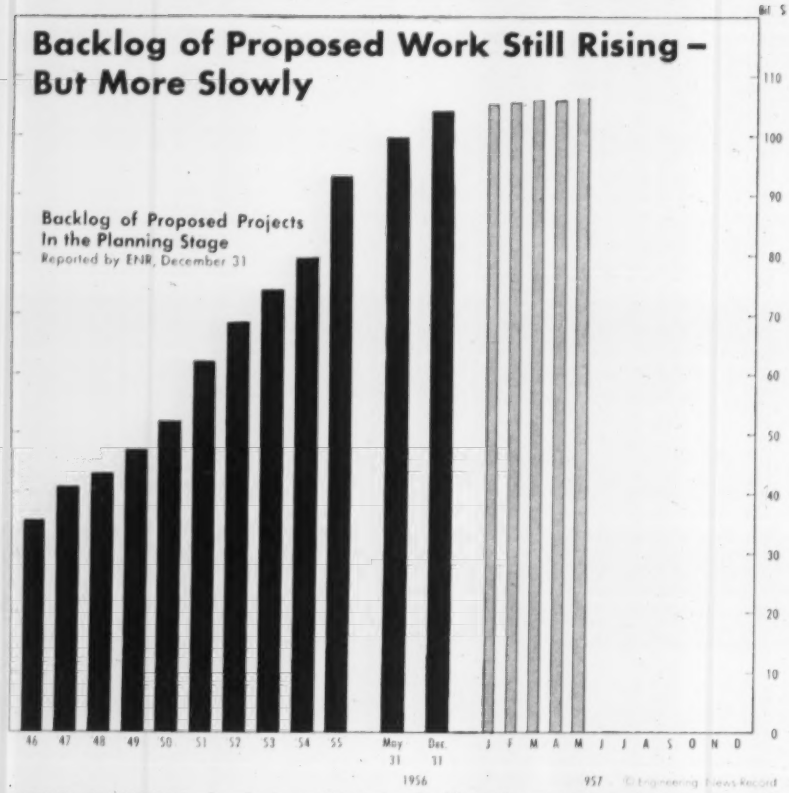
Contract awards for heavy construction other than building set a new record of $3.8 billion in the first six months of this year as awards piled up for highways, bridges, waterworks, sewerage facilities, dams and airports.

Building contractors have been taking the brunt of this year's downturn. Building contracts in the first six months of the year fell to $5.6 billion, down 21% from the second half of 1956 and off 30% from the peak rate set in the January to June, 1956, period. But the second half of this year looks brighter.

• **Upturn coming**—For the first six months of this year, contract awards for all types of heavy construction totaled about $9.4 billion. The total in the second half is expected to climb just above $10 billion. This would be a 6% increase over the first six months—but it would be 3% under the total for the second half of last year.

Why will the next six months be better? The principal reason is that private heavy construction will pick up. After a shaky recovery in April and May, private awards began to move higher in June. This trend will continue in the second half.

The rise in private work is overdue. It was first indicated by an increase in



AFTER CLIMBING sharply in earlier years, backlog of proposed work is leveling off.

the number of projects entering the planning stage during the latter part of 1956.

Because of this earlier buildup in proposed work, contract awards for private construction during the next six months are expected to climb 19% above the first half. All major types of private work—except industrial building will contribute to the gain, according to the ENR forecast.

Sharpest increases in private work in the second half probably will come in commercial building and private unclassified.

Some second half pickup is expected in contract awards for private mass housing. But the gain in housing contracts will be less spectacular than the anticipated gain in commercial building, for example.

Private mass housing awards will move up 18% above the low rate set in the first six months of this year. In contrast, commercial building contract volume is expected to jump 38% and private unclassified work may more than double the low award volume registered in the first half of this year.

• **Industrial still down**—The laggard in the second half, in the private work sector, probably will be industrial building. This type of work is expected to continue its decline in the next six months. But, the rate of drop off won't be as severe as it was in the first half of the year. The rate of descent probably will taper off to a total about 4% below the first six months, as against a 31% decline in the January to June period.

Despite the predicted rise in most categories, private contracts in the next six months will not match either the volume in the first half or second half of last year. The $5.2 billion forecast for the next six months is about 17% under the corresponding period of 1956, and it's 27% below the record-shattering pace set in the first half of 1956.

On the basis of the latest forecast, private heavy construction awards this year will total $9.65 billion. The total would be off 28% from the record 1956 high and would be 16% under 1955. However, it would still make this year the third best on record for private heavy construction contracts.

• **Public works boom**—Contracts for state and municipal work piled up impressively in the first half of the year and a further rise is expected in the second half. Credit for most of this increase will go to highway contracts. Dollar volume of awards for roadbuilding is expected to top the first half by about 11%.

Sewerage contracts also will go up in the second half. Waterworks, bridges, and public buildings other than housing will roughly equal their January to June performances.

Some second half declines are in the cards for public works. Earthwork-irrigation-drainage, waterways and public hydroelectric projects will fall sharply from the enormous first half volume. This is not tied in with any trend. It's due to the fact that some mammoth awards were made in the first six months by the Bureau of Reclamation—the $108 million award for Glen Canyon Dam and two contracts totaling more than $85 million for the Trinity Dam and Clear Creek Tunnel sections of California's Central Valley Project, for example. These king sized awards made the dollar volume of work in this category skyrocket in the first half. Prospects are dim for award of comparable jobs in the next six months, so the second half will show a downturn.

A drop also is expected in contract awards for Capehart military housing. Combined with a lower volume of earthwork-irrigation-drainage, this will result in a downturn in federal contracts in the second half. But, federal awards will top the comparable 1956 period by about 11%.

• **More, but not enough**—The expected increase in contract activity in the second half will help the year's total. But it won't be enough to offset the low volume posted in the January-June period. It means a substantial change in the earlier ENR forecast, which predicted that awards this year would hit $23.1 billion—a new record. The latest estimate (see chart) is for a total of $19.5 billion.

The lower volume reflects the deep slump in private work, including industrial building, mass housing and private unclassified. (Pipelines, transmission lines and privately owned hydroelectric power projects are the principal items in the private unclassified category.)

Two big factors in the precipitous drop (down 39% from a year ago) in private awards were a bigger-than-expected decline in industrial building and a serious slide in mass housing.

Industrial building contracts were expected to drop about 10%. Instead, they fell 39% in the first six months. This downturn is expected to continue in the second half because of a smaller volume of industrial building work entering the planning stage. The year probably will end with industrial contracts 36% under last year's record.

Housing also has suffered. The further tightening of the mortgage money supply this year has not only pulled housing contracts far under last year's total but also has brought a sharp drop in plans for new housing developments.

Pennsylvania Cuts Retainage

New law eases roadbuilders' working capital problem; state will pay interest on money held over 90 days

The load will be a little lighter from now on for every roadbuilder working on state highway work in Pennsylvania. The Keystone State has a new law on the books that drastically revises the State Highway Department's previous retainage policy.

Important provisions of the new law:

- Reduction of retained percentages on highway contracts from 10% on current estimates throughout the entire job to 10% on current jobs until half of the project has been completed.
- No retained percentage to be withheld by the Highway Department after 50% of the project has been completed.
- Payment by the Highway Department of 5% interest on monies retained on final estimates if the monies are held more than 90 days after completion and acceptance of the project.

The legislation, which was sponsored by Associated Pennsylvania Constructors, had a surprisingly easy time. The legislature passed the measure unanimously after APC pointed up the problem of financing highway jobs under the expanded federal-aid program.

The contractor group estimates that the new law will give roadbuilders 5% more working capital through the life of a job than the old rules.

"Payment of 5% interest on final estimates, beginning 90 days after jobs have been completed and accepted, will correct a hardship that has existed for many years," APC said in a statement.

"Over a long period of time," the association said, "several and certain districts throughout Pennsylvania have failed to complete their final figures on projects for many months and in some cases, for years. There have been cases when as many as 30 months have elapsed after completion of jobs before contractors received final payments."

The provision in the new law compelling the State Highway Department to pay 5% interest on final payments held over 90 days is expected to benefit the roadbuilders in two ways. It will reimburse them for the interest charges they pay for working capital borrowed on the jobs and, more important, the change probably will result in a faster state approval of final estimates.

Contractors in every section of the country have maintained for many years that unreasonable retention of final payments on public works projects has placed a needless and serious financial burden on builders. Many claim that it is necessary to bid higher on public works projects than on comparable private work because of this problem. However, when competition is keen—or credit is tight—contractors say they cannot afford to boost their bids and thus are at the mercy of the contracting authorities.

New Voting Right Sought By Engineers in Canada

Revision of Canada's present election act to protect the voting rights of engineers and other non-stationary citizens was urged in a resolution passed during the recent 71st annual meeting of the Engineering Institute of Canada.

The resolution calls for extending the privilege of voting at the advance poll to engineers, pointing out that on many occasions, in the ordinary execution of their duties, engineers are absent from their homes on election day and are thus disfranchised.

Brazil Signs Contracts for a New Capital City

For a half century or more, all maps of Brazil have shown a blocked area in the undeveloped interior labeled "future federal district." This rather fantastic dream of a new capital city carved out of the jungle began to come true last week with the signing of a contract with Raymond Concrete Pile Co., New York City, for the construction of 16 ministerial buildings at the site, which will be called Brasilia.

The contract covers foundations and steel erection for the buildings, essentially identical and 10 stories high, and in addition includes a dam and a 25,000 kw hydro plant for the city. Awarded on a cost plus fixed fee basis, the contract probably will total $20 million, of which $10 million has been loaned by the U. S. Export-Import Bank to finance purchase of earthmovers, tractors and other types of heavy equipment to be supplied by U. S. firms.

Shown at the contract signing above (left to right) Brazil's U. S. Ambassador Ernani do Amaral Peixoto, Raymond President George F. Ferris and Brig. Gen. B. B. Talley (U. S. Corps of Engineers, Ret.) who will have overall supervision of the project for Raymond.

A Brazilian government corporation has been formed and charged with bringing the new city to a state of beneficial occupancy within four years. Called Companhia Urbanisadora do Nova Capital, or NOVACAP, it plans to start selling lots on the site within the next few months, and to get streets and roads paved.

At the present time, the proposed capital includes a temporary president's residence, a chapel, 600 houses and barracks, and shopping facilities for 4,000 workers. An airstrip, 10,500 ft long, is two-thirds complete.

New Sponsor for an Old Job

New York City admits to failure of first Manhattantown group after 5 years—Webb & Knapp submits offer

One of the key projects in New York City's slum clearance program, long battered by federal agencies, political rivalries and some segments of the public press, appears to have run aground.

As a result, one of the nation's largest developers, Webb & Knapp, seems certain to take over sponsorship of the ill-fated $37.5 million Manhattantown project which has floundered for five years.

Manhattantown, Inc., the corporation that successfully bid on development of the urban renewal project in 1952, has been under fire for more than a year because of failure to line up financing and start construction.

• **Property condemned**—The six block redevelopment site in the upper Manhattan area was bought by the corporation for $3.1 million after the city had condemned it at a cost of $16.2 million. The write-down was covered one-third by the city and two-thirds by the federal government under Title I of the National Housing Act.

As approved by Commissioner Robert Moses, chairman of the slum clearance committee, Manhattantown planned construction of 17 buildings, each 20 stories high and containing a total of 2,560 apartments.

The city took back a $2 million mortgage on the $3.1 million sale price and the Federal Housing Administration provided insurance commitments for $10 million in mortgages on the first three buildings.

But since that day five years ago when Manhattantown acquired the property, nothing has been done.

• **Source of trouble**—The inactivity brought on several skirmishes with the federal agencies involved. Some of the trouble results from a problem peculiar to New York City's urban renewal operation (ENR June 7, 1956, p. 28). Under its program, "land and people" are turned over to the developer. He has the responsibility of relocating the families in the slum area to be razed and rebuilt.

In all other cities, the municipality or a public agency selected by the city handles tenant relocation.

Manhattantown, Inc., was not altogether inactive, however. It has collected rents from the tenants and also fees in areas set aside for car parking.

• **City moves in**—In mid-June the city announced foreclosure action and filed suit in State Supreme Court. By this time Manhattantown, Inc., had piled up tax arrears of $600,000 and mortgage interest arrears of $50,000.

With the city's foreclosure announcement, Webb & Knapp stepped in with an offer to take over the Manhattantown project. The offer to the Board of Estimate and the slum clearance committee included:

- Payment of back taxes and mortgage interest to the city.
- Purchase of 136 of the 200 capital shares of Manhattantown stock held by Jack Ferman, Seymour Milstein and their families at the original issue price of $1,250 per share.
- Assumption of the $2 million mortgage with one-third reduction in August.
- Payment of Mr. Ferman's and Mr. Milstein's notes and accrued interest from 1952 to date.
- Payment of the Fermans' legal fees of $25,000.
- Payment of Manhattantown's legal fees to Daniel J. Reisner totaling $75,000 including a one-year retaining fee of $25,000.
- Payment of $30,000 annually for five years to Jack Ferman as a half-time consultant.

• **"Yes" and "no"**—To all of these, Commissioner Moses' slum committee agreed. But the Board of Estimate said "no." A revised offer from Webb & Knapp, made directly to the Board of Estimate, eliminated the half-time consultant proposition for Mr. Ferman and the legal retainer fee for Mr. Reisner. The latter would be compensated about $37,500 for past legal services.

The Board of Estimate approved the change but also stipulated that Webb & Knapp put up a performance bond.

The company agreed to this and will put up a $900,000 performance bond to guarantee that the first three buildings in the Manhattantown project will be built within two years after approval of the contract. Webb & Knapp also announced that ground will be broken for the project about two weeks after the contract is signed.

Before construction can start, however, FHA mortgage insurance commitments are required. These are expected shortly.

• **Earlier action**—But Manhattantown is not the only New York urban renewal project in trouble. Prior to activity on that front, the city announced that Webb & Knapp had acquired the New York University-Bellevue three-block housing site on Manhattan's East Side from its original developers.

Through a subsidiary, the company bought the controlling stock interest in University Center, Inc., for approximately $1 million. The city had sold the site to University Center for $2.8 million, of which $1.9 million was a city mortgage.

Webb & Knapp's purchase price included the original sponsor's cash outlay for site acquisition and tenant relocation.

Utilities Relocation

12 states approve and 19 reject new legislation on reimbursement this year

The battle over who should pay the cost to utilities for relocation of their facilities, precipitated anew by the interstate highway program, really stepped into high gear this year as 38 states considered permissive legislation. Here is the boxscore:

Legislation that would pay the cost for utility relocation was defeated in 19 states: Arizona, Arkansas, Colorado, Connecticut, Georgia, Indiana, Iowa, Kansas, Maryland, Michigan, Missouri, New York, South Dakota, Oregon, Rhode Island, Vermont, Washington, West Virginia and Wyoming.

In five of these states, the legislatures passed bills but the governor vetoed them—Colorado, Kansas, New York, Wyoming and Rhode Island.

New laws in 12 states require the state to pay the relocation costs in varying degrees: Idaho, New Mexico and Utah pay costs on all federal-aid systems; Montana reimburses 75% of the cost on federal-aid systems; Delaware, Florida, Maine, Minnesota, North Dakota, Oklahoma, Tennessee and Texas pay costs on the interstate system. (The Tennessee road commissioner reportedly says he will not pay the costs unless the Supreme Court orders him to.)

Bills are pending in seven states: California, Illinois, New Hampshire, Ohio, Pennsylvania, Wisconsin and Nebraska.

The present federal highway act permits reimbursement by the states (with federal monies in proportion to that furnished for the remainder of the project) if reimbursement is the policy of the states. Now Rep. Robert E. Jones has introduced federal legislation to prevent highway trust fund money from being used to reimburse states. Congressman Jones fought the measure last year, now claims that it was not the intent of Congress for states to start passing new legislation calling for utility reimbursement. There is little chance for action on his bills this year, however.

LaGuardia Airport's Outmoded Terminal . . .

. . . Will Become $32 Million Facility by 1965

Less than 20 years ago New York's LaGuardia Airport was opened as the most modern air terminal in the United States. Now badly outmoded and overcrowded passenger facilities are to be rebuilt at a cost of $32 million.

Sponsor of the project is the bi-state Port of New York Authority, which operates the airfield under long-term lease from the city of New York. Cost of the work will be covered by a new PNYA bond issue, to be repaid through increases in rentals and landing fees approved by the major airlines using the terminal.

Principal element in the new program will be the eventual reconstruction of the existing circular terminal building into a long, 2-story arc that will give each airline its own section where its passengers can be handled directly to their planes without passing through a central area. Outgoing passengers will arrive—by means of a new highway ramp—at the upper story of the structure, pass through ticketing counters on that floor and proceed directly to their planes through one of four finger ramps that will be capable of handling 36 large planes at one time. Arriving passengers will pass through the lower floor of the structure to buses or automobiles at street level.

First stage of the work will include filling in an ornamental lagoon that now divides the airport property from the city's mainland. The space thus created will be used as a parking area for more than 3,000 cars. Then the two wings will be added on either side of the existing structure. When this work is completed—by 1960—the central structure will be demolished and replaced.

Now handling about 5 million passengers a year, the airport is expected to accommodate about 7 million by 1965. Since the length of the runways is limited (longest 6,000 ft), the airport will be used principally for short-haul flights, with most long-haul flights moving to Idlewild—almost directly across Long Island, facing New York Bay.

Port Authority officials said that while the new work is going on, work to continue to stabilize the airfield itself —now sinking at the rate of about 3½ in. per year in some sections—will continue, and runways will be regraded and repaved to handle newer, faster, heavier planes of up to 175,000 lb gross weight. Dikes, combined with sand drains, now protect the airfield from high water.

In Bromley, Ky., sewage works study . . .

Operation Called Crux of Odor Problem

There is nothing so wrong with the new famous odor-producing Bromley, Ky., sewage treatment plant that sound operation cannot overcome, concluded three engineers of the Kentucky Water Pollution Control Commission in an official report made public last week. The full commission accepted its engineers' verdict by announcing it would oppose efforts to shut down again the plant being operated by Sanitation District No. 1 of Campbell and Kenton Counties.

The Kentucky regulatory agency's report is in general agreement with the recommendations of J. Stephen Watkins, Lexington, Ky., for correction of the odor and other problems.

The colorful history of the Bromley plant—a 47.5 mgd primary works with vacuum filtration and incineration of sludge—began with its inauguration in August, 1954, when five settling tanks of some 3 million gal capacity were filled with raw sewage which was allowed to remain for three weeks. The stench that arose served to excite nearby residents of Bromley so that they have not yet calmed down.

Noxious odors of a more normal degree persisted in subsequent months and Bromley citizens were successful in obtaining a court order closing the plant in June, 1955. Two reports by Consultant Watkins, dated December, 1955, (ENR Mar. 22, 1956, p. 43) and May, 1956 laid the odors to inadequacies in the sludge handling process and the presence of septic sewage in poorly designed and maintained local sewers near the plant. What made the sludge handling so crucial, said the Watkins report, was a long district collection system which brought raw sewage to the plant that was on the verge of becoming septic.

• **Poor operation**—While the Watkins reports, prepared with the aid of Greeley & Hansen, Chicago, were being evaluated, the Sanitation District engaged in several successful legal battles aimed at forcing residents to continue paying sewerage charges. During the litigation, it was brought out that poor operation of the plant was compounding the difficulties due to inadequate facilities.

The Bromley plant was finally reopened in December, 1956, after some $200,000 worth of modifications had been made. Shortly thereafter the district borrowed a top grade plant superintendent from St. Paul. Ever since—according to the Watkins firm and, by implication, the Kentucky Water Pollution Control Commission—the plant has operated satisfactorily, in regard to both odor inhibition and normal performance criteria. Residents of Bromley, however, still are moving to have the plant shut down.

• **Odor prevention**—As built, the Bromley plant provided 3 minute detention at peak flow of 47.5 mgd in aerated grit chambers equipped with comminutors; chemical feed equipment for ferric sulphate and lime; preaeration-flocculation tanks allowing 30 minute detention and 0.1 cu ft per gal of air; 2 hour detention in five settling tanks; two raw sludge holding tanks of 6 days capacity; vacuum filters; and incineration. Very shortly after the plant was started up, it became apparent that the sludge holding tanks created an insurmountable odor problem and they were idled.

To combat the near septic condition of raw sewage, the district is adding an odor-masking compound known as Othosolv at the grit chamber, is increasing preaeration and has made a number of housekeeping changes regarding preventing detention of raw sewage in the influent flume to the flocculation tanks and a fresh water washdown system. The recent state report concurs in these actions except for the odor masking agent; state engineers recommend chlorination of raw sewage, controlled by an oxidation reduction potential cell.

• **Sludge handling**—The more crucial area of odor control is in handling and conditioning sludge from the settling tanks. Main attempt has been to speed getting the raw sludge to the incinerators, particularly during hot weather. Toward this end, the district installed separate sludge control valves on each settling tank, reduced capacity of the sludge pumps for more constant pumping, and remodeled the raw sludge well.

To aid sludge conditioning, the lime storage bins were revised, a gravimetric dry feeder for lime was installed and chemical mixing modified. The district still has to modify ferric sulphate feed facilities, which are called entirely inadequate by the state engineers.

An afterburner was installed for raising temperature of incinerator stack gases to provide positive control over stack gas odors as recommended by Consultant Watkins. Although the current plant superintendent and incinerator maker have their doubts, the state report calls this measure desirable.

• **Outside the plant**—The state engineers also recommend that the district maintain tighter control over industrial wastes being received in its collection system (one company producing rum for flavoring tobacco discharges a waste containing 15,000 ppm and more of (BOD) and that extensive investigation be made of the flat grades and faulty sewers in and around Bromley. They further suggest that forced air venting of the sludge conditioning tank through the sludge well may be less costly than use of chemicals or odor masking.

However, time and again the regulatory agency report returns to the question of plant operation. The district is trying to persuade its import from Minnesota to remain.

Since the Bromley plant resumed operation its discharges into the Ohio River have been meeting requirements of the Ohio River Valley Water Sanitation Commission. For flows of less than 10 mgd more than 90% of the time, the plant has removed better than 95% of settleable solids, about 60% of suspended solids and is achieving an average 40% BOD removal with 3 to 4 hour detention. Orsanco requires 45% suspended solids removal and a minimum of 35% BOD removal.

The Kentucky Water Pollution Control Commission's report was prepared by Walter C. Martin, H. D. Tomlinson and Judson Cramer, all members of the regular staff. Original design of the plant and collection system was prepared by Vogt, Ivers, Seaman & Associates, Cincinnati.

Southwest Spring Flood Damage Hits $125 Million

Terming the April to June floods in Texas and the adjacent Southwest as the most sustained general flooding in the history of this area's streamflow records, the Crops of Engineers has placed damage at $125 million, damage prevented at $142 million.

Worst hit basins were the Brazos and Arkansas ($38 million damage each), Trinity ($17 million) and Red ($11 million). Twenty-seven federal reservoirs operated by the Southeastern Division caught 20 million acre-ft, now contain 27 million acre-ft. The nearly completed control system in the upper Trinity kept river stage at Dallas to 41.7 ft with discharge of 72,000 cfs. Uncontrolled, the stage would have been 54 ft and discharge 190,000 cfs, slightly greater than previous 1908 records.

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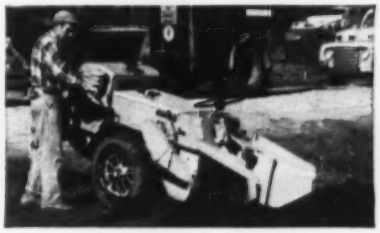

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Model 44-C for heavy-duty trenching. It cuts to 8'3" deep, 24" wide. 15 digging speeds from 1 to 11 ft. per min., or available with Hydra-Crowd with infinitely variable speeds from 0 to 7 ft. per min.

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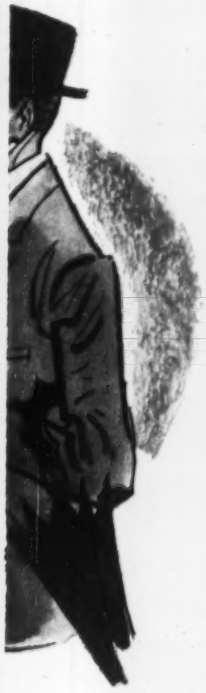

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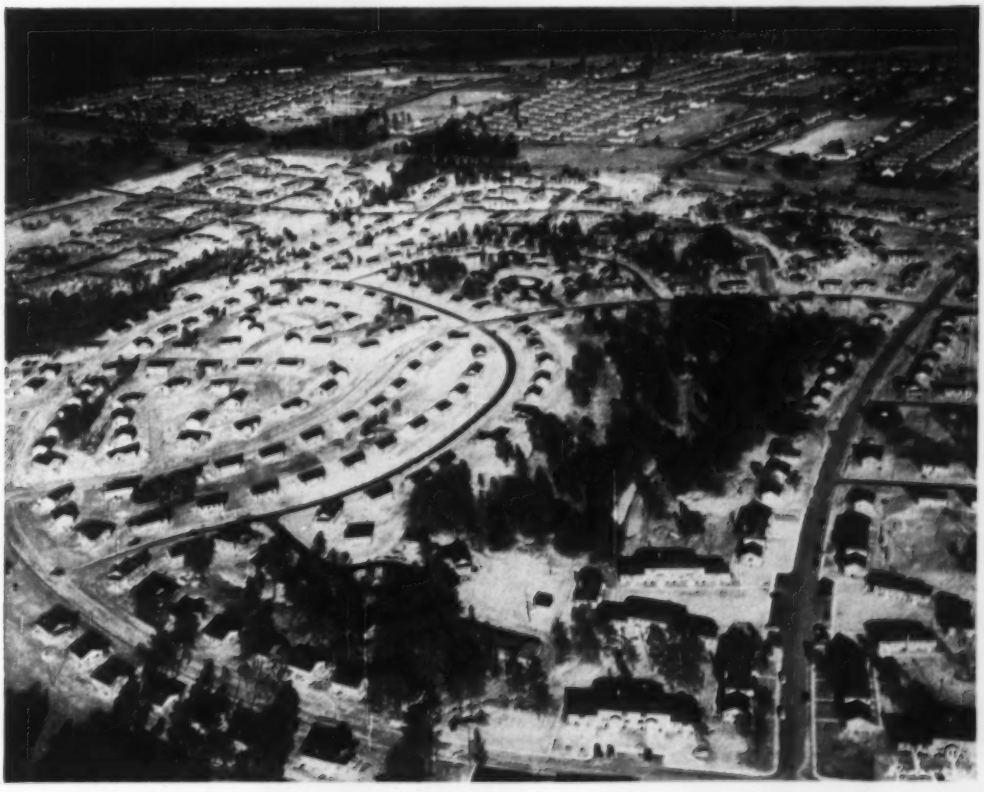
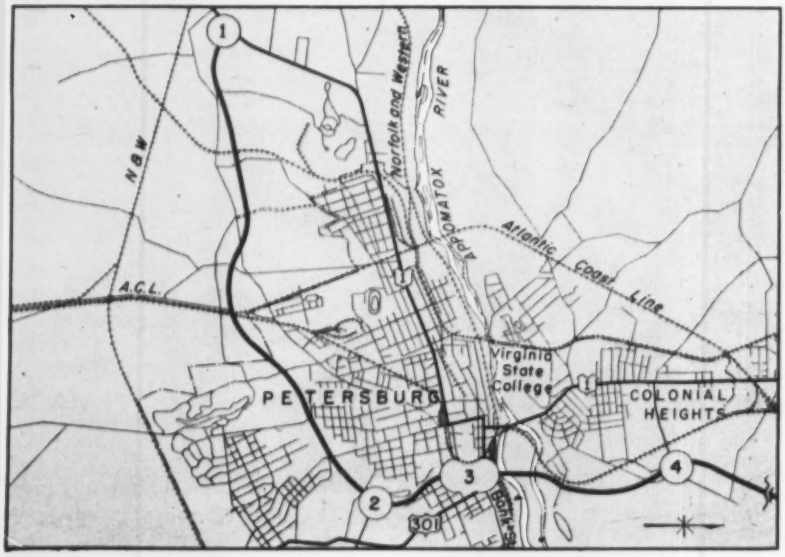
Bird's Eye View of Mallonee Village consisting of 2,000 dwelling units at Fort Bragg, N. C., built by T. A. Loving & Co. American Mutual safety know-how helped keep accidents down . . . and profits up.



Unusual Turnpike Is Bond Financed City

BROAD STREET INTERCHANGE—a toughest construction spot on the pike—has 80 ft variations in grade.



Route of the "city turnpike" through Petersburg . . .

. . . and Richmond

. . . indicates complexity of design and construction . . . More than 16 of the road's 34 miles are within city limits as are 8 of it's 17 interchanges. For local traffic, the tollroad will become an arterial highway. For through traffic it will more than halve the time now required to get from north of Richmond to south of Petersburg.

Expressway

A turnpike that is not really a turnpike, a tollroad that has already been approved as part of the toll free interstate highway network; a road that is to run through a city jail, but whose construction details were changed to avoid taking the corner of a peanut factory—that's the Richmond-Petersburg Turnpike.

And this is only a small part of the story of one of the most unusual roads being constructed in the United States today—a road, which both in legal set-up and in construction problems is probably unique.

To begin with, in spite of its designation, the $70 million highway is not, and never was intended to be a turnpike in the commonly accepted sense.

Whereas the usual turnpike is located to keep traffic away from congested areas, almost half the length of The Richmond-Petersburg Turnpike is within city limits. Of its 34.7 mile length, 12.3 miles are in the heart of Richmond and 4.0 miles are in Petersburg. Of its 17 interchanges, 8 are direct connections to Richmond city streets, and 2 ramp into Petersburg streets. In rural Chesterfield county between the two cities, there are only 3 interchanges.

Actually the construction of the road as a bond-financed project under an authority was decided on as the means for solving a growing problem after Richmond voters defeated a 1950 referendum on a tax financed expressway.

After inclusion of several unusual legal provisions, the enabling legislation was approved by the state in 1954, and the authority was set up. Parsons-Brinckerhoff, Hall & Macdonald, of New York, were retained to design the road, but no sooner had the initial contracts been awarded than the Federal Highway Act of 1956 was passed by Congress.

The design criteria for the turnpike complied substantially with the standards set by the Bureau of Public Roads for the Interstate system, and at the request of the State Highway Department the turnpike was incorporated as a part of the system. The department is cooperating with the authority in the design of turnpike connections north and south with the free interstate system.

According to John Pershing, now general manager of the authority, it is probable that certain of the provisions of the turnpike act will have to be changed before the road can actually become a free part of the interstate system.

Pershing should know, since in 1954, as partner of the firm of Mitchell, Pershing, Shetterly & Mitchell, he assisted in the writing of both the enabling legislation and the bond indenture. The most unusual provisions of the turnpike legislation, are these:

• **Legal protection**—To make the bonds attractive, it was necessary to protect the route against the competition of additional free roads. For this reason, one section of the turnpike act stipulates that "So long as any bonds issued under the provisions of this article are outstanding, no limited access express high-

CITY JAIL stands amid fill two stories high at Broad Street interchange. It will be demolished when city readies other quarters for it's 538 "guests."

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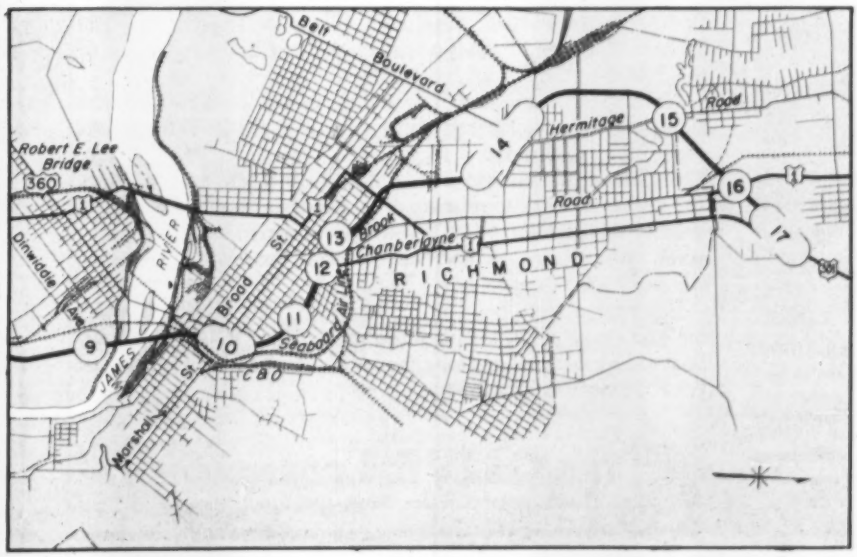

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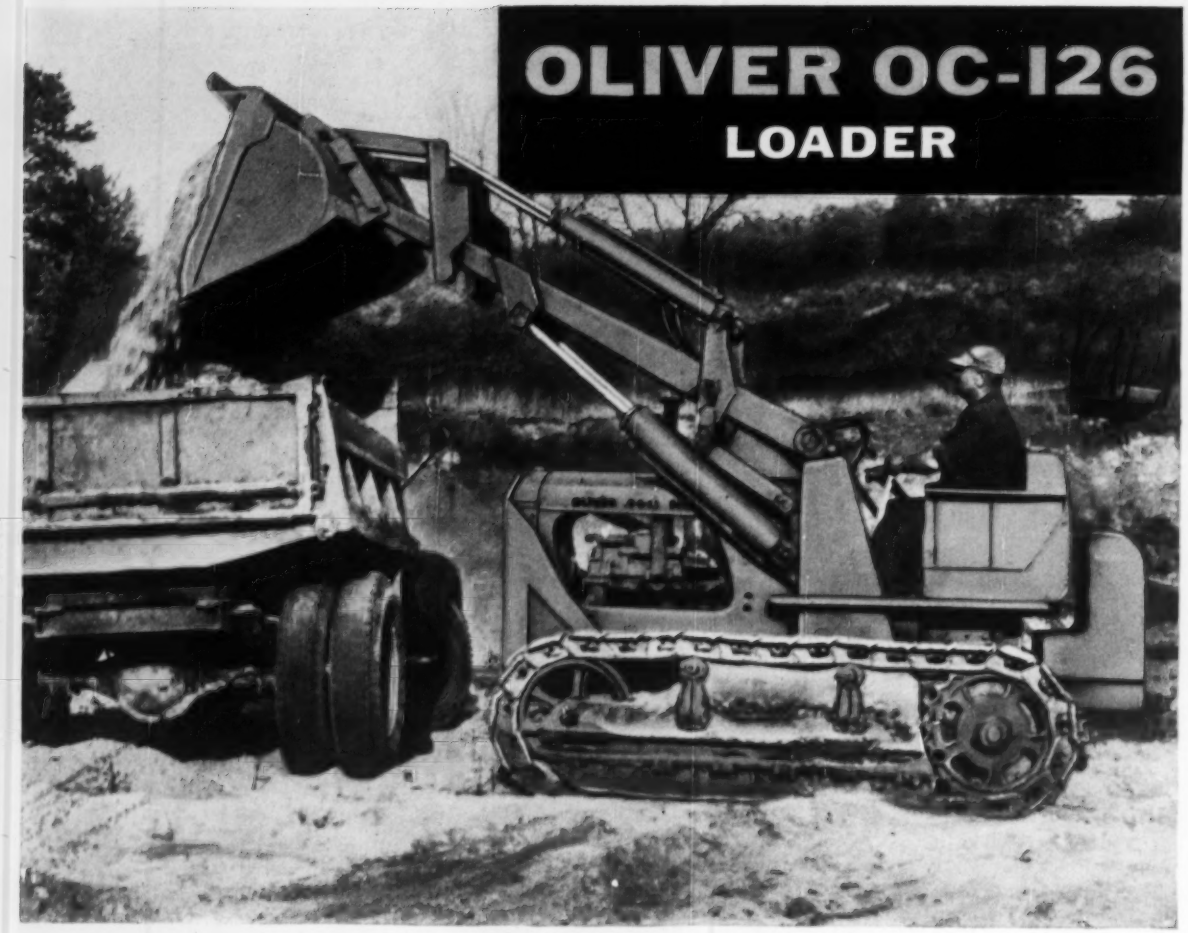

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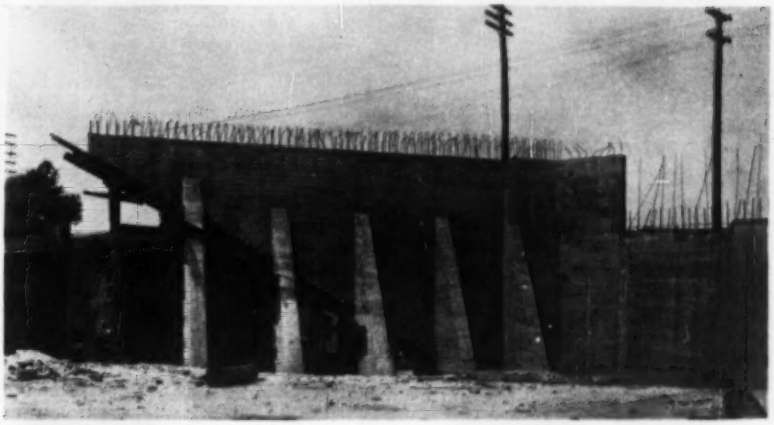


WINGWALLS at the south crossing of the Appomattox are supported by open counterforts. Openings reduce lateral pressures, permit constant wall thickness.

way or superhighway competing with the project and located within a distance of 25 miles of any part of the project shall be constructed by the Commonwealth, nor shall the Commonwealth consent to the construction of any such highway."

The protection afforded by this clause can be abrogated only under one of two conditions:

1. A survey made by "independent engineers of nationwide repute" selected by the State Highway Commission and approved by the turnpike authority, must report that construction of another highway will not appreciably affect the revenues of the pike, or . . .

2. Money must be provided for payment in full of all outstanding bonds including any interest or premiums involved. Inclusion of restrictions on construction of competing facilities is not uncommon in toll bridge legislation, but according to Pershing this is the first time it has ever been applied to a toll highway.

• **Then toll free**—A second point and one which promises eventual trouble—is the provision that once the bondholders have been paid or sufficient money is provided for payment, the road must immediately become toll free.

The hitch here is that respective sections of the pike must then become the property of the political subdivision through which they pass. Thus, for the purposes of operation and maintenance the two ends of the road will fall under the jurisdiction of the state; Richmond, Petersburg, the neighboring city of Colonial Heights will each get possession of parts while the middle section of it will go to Chesterfield County.

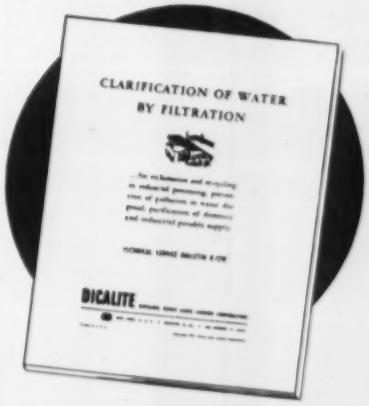
Since—under present rules—the Bureau of Public Roads will reimburse only state governments for the cost of road built outside the provisions of the highway act but later included in the interstate system, contribution of federal funds will be impossible until this situation is changed.

• **Right-of-way hurdles**—One other unusual—and somewhat trying—limitation had to do with acquisition of right of way. The authority was given the right to condemn any land of facility it needed, except when such land or facility belonged to a corporation itself invested with eminent domain. Thus railroads (of which there are five concerned) and utilities held a decided advantage in all negotiations. In the absence of voluntary negotiations for the acquisition of such properties, the authority is required to prove before the State Corporation Commission that the facility is not necessary for the successful operation of the present owner, and the site is necessary for the turnpike.

• **Construction hurdles, too**—While the legal problems created by the enabling legislation were tough, the construction problems created by the route of the pike were even more difficult.

In its few miles, the road presents just about every highway construction problem known with the exception of rock blasting. Running as it does through city, surburban and rural districts, the problems peculiar to each area were plentiful. Characteristically it was city construction that gave the most trouble. In Richmond alone, more than 700 dwellings—most of them substandard—housing more than 800 families, were torn down.

Relocation of families was accomplished in less than one year with the help of the Richmond Redevelopment Housing Authority. Acquisition of the land was simplified considerably by a policy which permitted tenants of buildings



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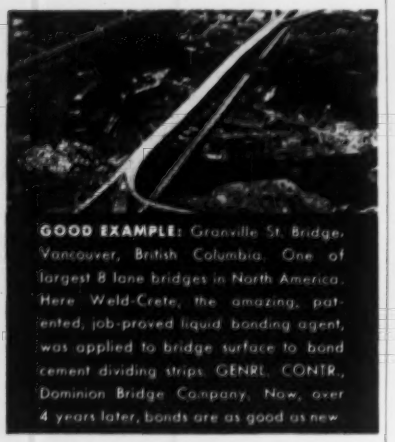

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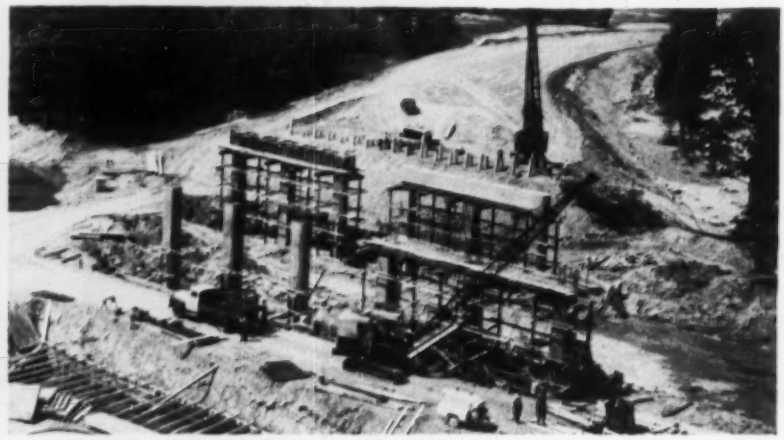
DIETZGEN

. . . Some tenants want to move but can't



BRIDGE being constructed near Colonial Heights will carry turnpike traffic over Old Town Creek. Countryside is typical of Chesterfield County.

in the area of the Richmond Redevelopment Housing Authority to remain in them—rent free—until other homes were found for them.

Virtually all of the houses were tenant occupied. When the authority acquired one house in an area, word spread that its occupants were paying no rent. Consequently, the tenants of neighboring houses refused to pay rent. Thus, landowners who refused to sell, either through a desire to collect more rents, or to obtain unreasonable prices for their property, found themselves in a box. With no rent receipts to help offset the costs of a court fight, landowners were willing to settle immediately for the same figure they believed they could get in court. As a result, during the first year of operation, the authority was able to acquire more than 98% of the 1,267 parcels of land needed.

• **Some tenants can't move**—The tenants of one structure, however, are giving the turnpike authority some trouble, because as much as they would like to, they cannot move.

These problem tenants are the 538 inmates of the Richmond jail now located in the center of what will eventually be the Broad Street Interchange. Plans for an out-of-city jail were blocked by a court action so until permanent facilities can be erected, the city is converting a dock warehouse in South Richmond to serve temporarily.

It is expected that by July 1 demolition of the old jail can be started. In the meantime, construction of the interchange is going ahead.

Aside from the jail, the Broad Street Interchange is in a tight spot. Crammed in between the Medical College of Virginia, the Department of Highways building and the Seaboard Airline Rail Road, the 600 ft wide .41 mile long interchange involves land costs of more than $700,000 and construction costs in excess of $3 million.

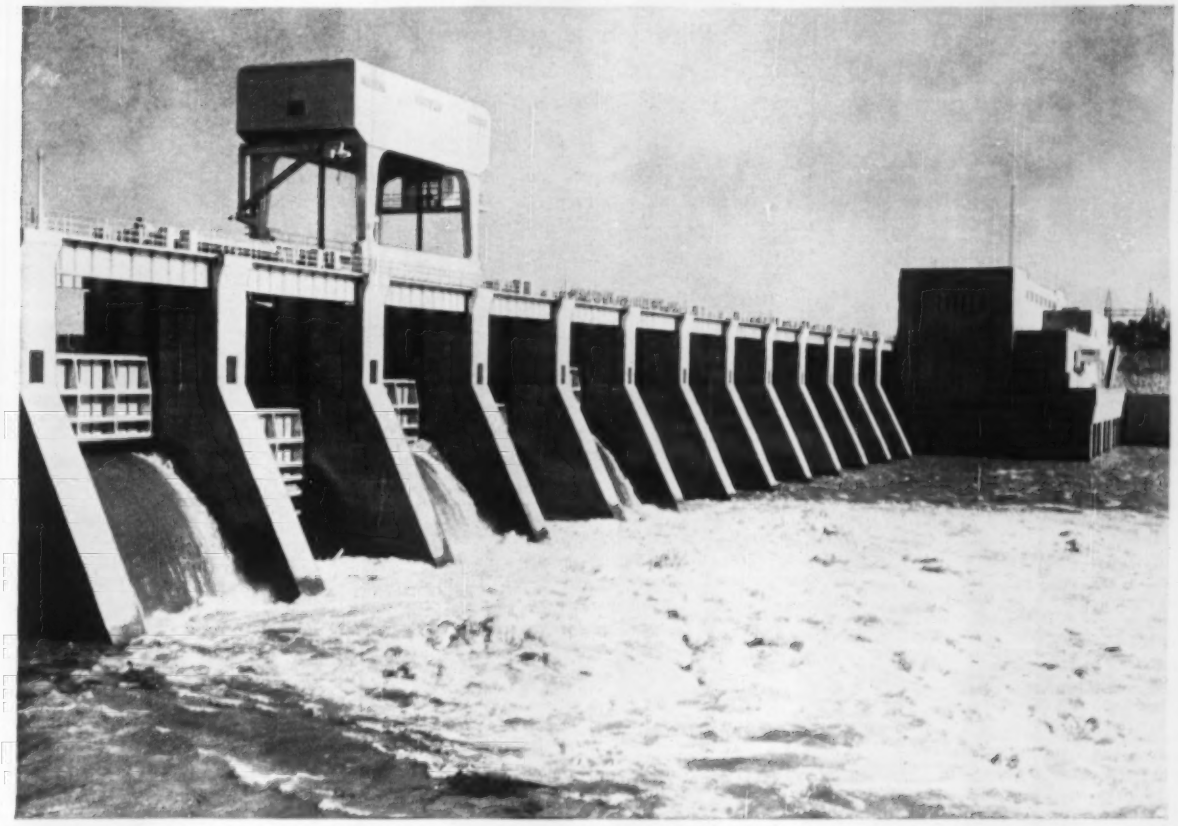
• **Grade variation another problem**—The complexity of the interchange is greatly increased by the big grade variations in the small area. Actually, the interchange is being built on, and parallel to, the side of a steep hill. In its narrow width, the ground varies from El 110.0 at Broad and Ballard Streets to El 30.0 at the railroad, a little more than 500 ft away. Broad Street itself varies within the ramp area more than 55 ft. Thus the road's westbound traffic ramp from the southbound lane hooks into Broad Street at El 110.0 while the eastbound ramp of the northbound lane comes into the same street only 550 ft away at El 55.0. Coping with the grade problem requires an elongated ramp system using 2.5 miles of pavement, and 2,700 lin ft of retaining walls up to 37 ft high.

• **Truss bents in boxes**—The truss bents of the Marshall Street Viaduct pose another problem. Five of these viaduct supports are within the interchange limits, and their foundations are considerably below the level of the new roadway. Rather than disturb the existing structure, the engineers decided to construct an open concrete box around each support, thus putting the support bases inside concrete wells 15 to 18 ft deep.

• **Peanuts prove expensive**—The design and construction problems are by no means limited to the Richmond area.

In planning one stretch of the road just north of Petersburg, the engineers learned that the monetary value of peanuts is not necessarily peanuts. Here, the original design of the highway was slated to remove one corner of a large peanut processing plant—a corner containing the boilers used for roasting.

(*Continued on page 36*)



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The recently completed Jim Woodruff Dam at Chattahoochee, Florida, is a prime example of the way concrete is bringing new development potential and industrial opportunity to the South. It spans the Apalachicola River just below the confluence of the Flint and Chattahoochee Rivers, and provides a new lake and recreation area, a new waterway, and 30,000 kilowatts of new power.

Contractors for this highly useful project were Perini, Walsh, Mills, and Blythe Brothers construction companies, a joint venture sponsored by B. Perini and Sons, Framingham, Massachusetts.

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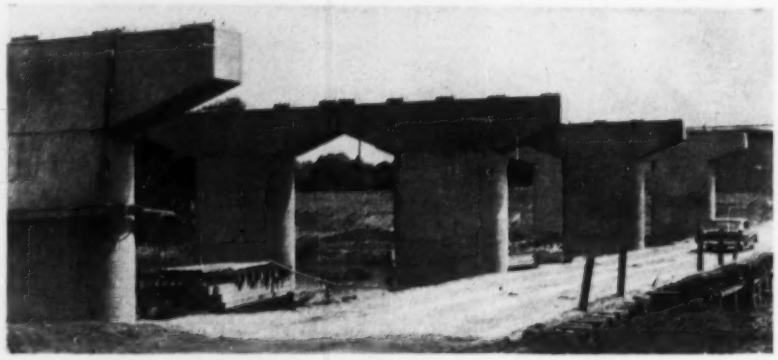
. . . Pike job is split into 17 contracts



RESEMBLING A MODERN STONEHENGE, piers at the north branch of the Appomattox await superstructure. Bridge over navigable south branch is higher and longer.

The roasting of peanuts is a long operation, and any interuption will ruin the product. Since the company claimed to be processing more than $500,000 worth of nuts at all times, the engineers were faced with either changing the road or acquiring title to tons of half-cooked peanuts. They changed the design.

• **Highway hopscotch**—In spite of its short length, the road involves 95 crossings of which 19 are double structures. This figure included 18 box culverts, many of which are quite big.

Largest culvert is a triple 10 x 12 260 ft long already in place at Lieutenant Run. Of the remaining structures, 32 carry the highway over rivers, highways, railroads or other installations, and 40 carry roads and railroads over the pike. Access ramps require five additional bridges.

Longest structure in the highway is the 4,220 ft James River Bridge on which the substructure is nearly complete (ENR March 21, p. 93). The river spans of the $7.5 million bridge will clear MHW by as much as 83 ft. The longest spans on the structure, however, are not over the river, but are in the land section. One deck truss over railroad property is 260 ft long.

Among the other large structures on the route are the crossings of two branches of the Appomattox River and the crossing of Swift Creek. Because these waterways are regarded as navigable, the bridges must provide clearance for navigation.

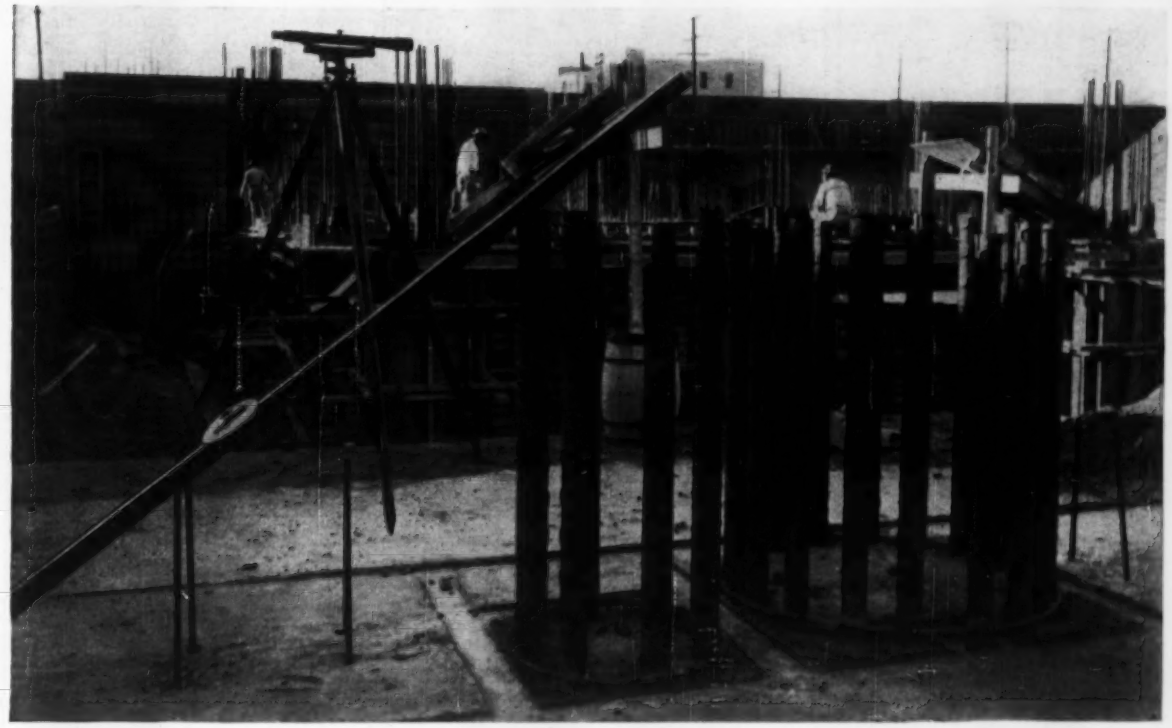
In all, the Richmond-Petersburg road is split into 17 contracts—with the length of each contract determined principally by grading and access requirements. The steep, rolling countryside through which the route passes requires the movement of tremendous quantities of earth for very short distances.

Throughout the entire project, the balancing of cuts and fills has worked out very well. Because of the careful consideration given to the topography by the engineers, borrow excavation on all but two contracts was reduced to a point where it was not a major bid item, and only two contracts had any waste even in negligible quantities.

There is nothing negligible however, in the total quantities of materials being used on the project. In all, more than 11 million cu yd of earth is being moved, and more than 300,000 ft of concrete piles are being driven. About 20 million pounds of reinforcing rods and 20,000 tons of structural steel are being placed in the structures and more than 250,000 ft of pipe of all types are being laid in, under and beside the road.

Until last May, work on the turnpike was under the direction of George Shropshire, the authority's 34-year-old chief engineer. When Shropshire resigned to work for a contractor, he was replaced by 33-year-old Frank Blackwell, formerly an engineer for the Virginia Department of Highways.

BRIDGE near Colonial Heights has monolithic deck, safety curb and sidewalk.



King-size No. 18 bar is used in columns which will rise 150 ft to the roof of the building.

King-Size Reinforcing Bars Used in Construction of Los Angeles Furniture Mart

Focal point for Southern California's $300 million-a-year furniture industry is the gigantic new Furniture Mart, now under construction.

The 12-floor structure will be located in downtown Los Angeles on approximately two acres of a four-acre plot, the remaining space set aside for parking and future expansion.

The building, a flat-slab structure with a floor area totalling over 860,000 sq ft, will contain some 35,000 cu yd of concrete, reinforced by 3,000 tons of Bethlehem reinforcing bars. Some 900 tons will be the king-size No. 18 bar, largest size rolled. The use of this bar, with its cross-section equivalent of 2 in., permitted fewer columns and, at the same time, allowed the size of the columns to remain uniform throughout the 150-ft height from basement to twelfth floor ceiling.

Bethlehem is well equipped to give excellent service in furnishing reinforcing bars. Bethlehem bars are made from new-billet steel to ASTM Specifications A-15 and A-305. They reach the job site bundled and tagged.

The new Los Angeles Furniture Mart, shown here during foundation construction, was designed by Heitschmidt & Thompson, architects. Consulting engineers: Beatty & Clar; general contractor: J. A. McNeil, Inc.; bar fabrication: Rutherford & Skoubye.

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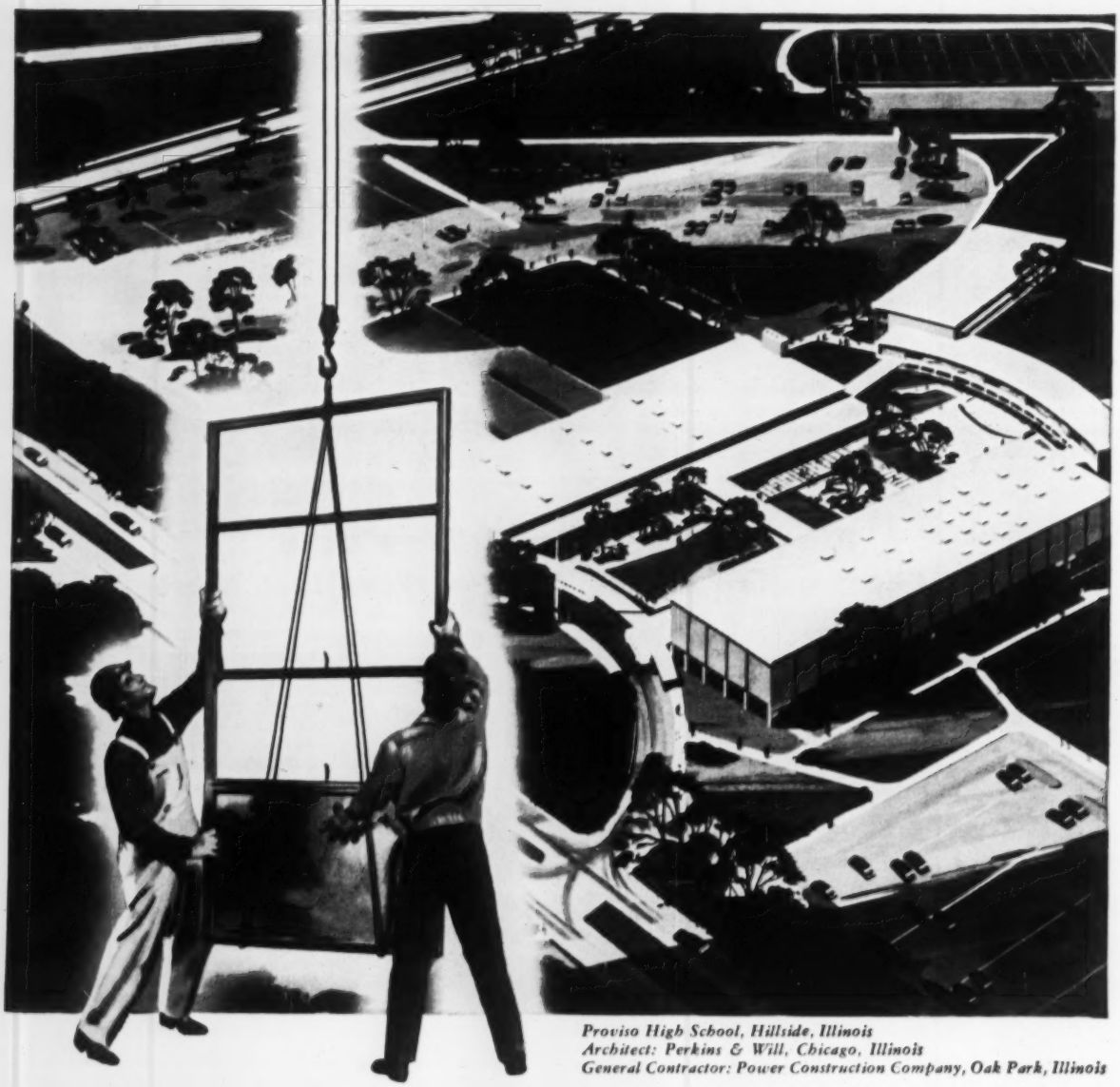

Proviso High School, Hillside, Illinois
Architect: Perkins & Will, Chicago, Illinois
General Contractor: Power Construction Company, Oak Park, Illinois

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Truscon Vision-Vent® Window Walls made of aluminum are a continuation of the highly successful and popular window wall as originally designed, developed, and produced in steel by Truscon.

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Truscon Vision-Vent Window Walls made of aluminum feature a new concept of horizontal mullions to provide ample strength and weathering with adequate provision for expansion and contraction.

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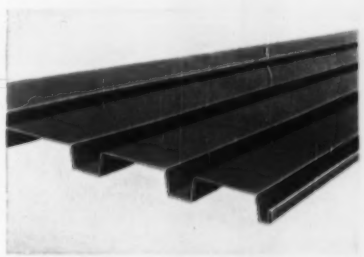

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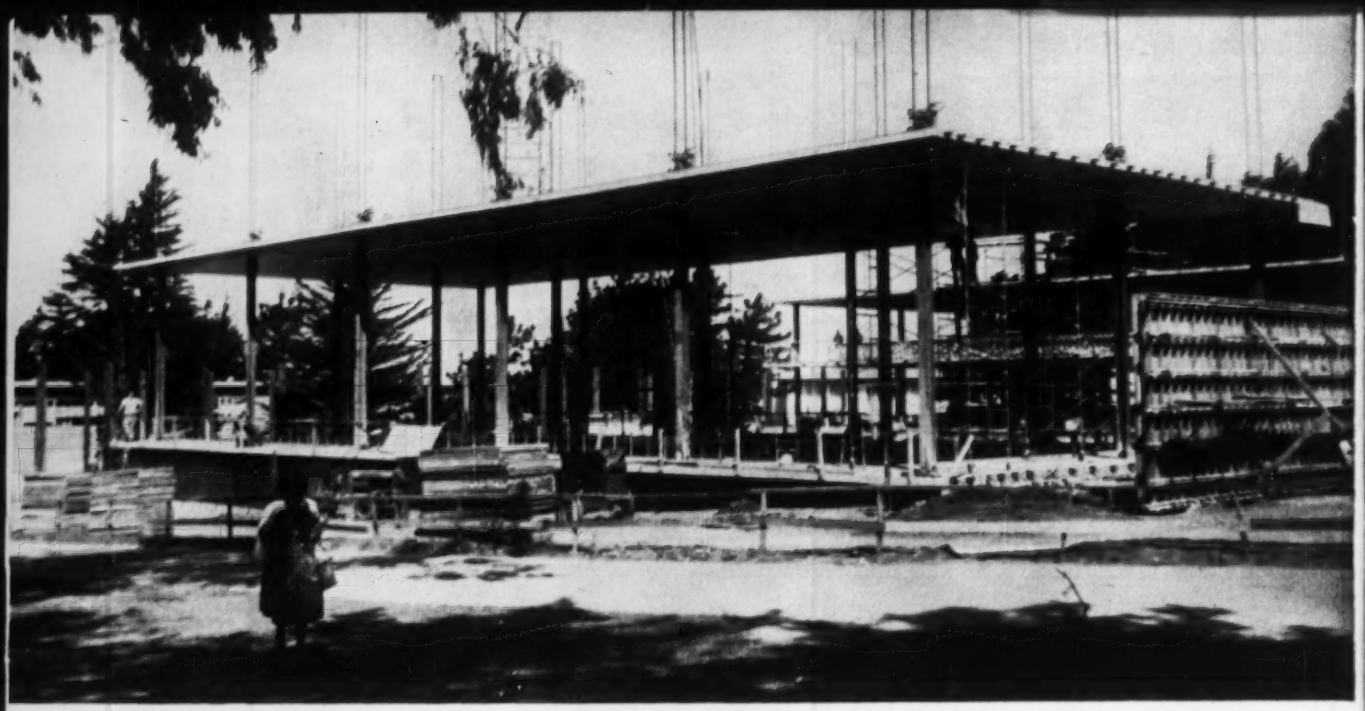


PRESTRESSED LIFT SLAB classroom building at San Francisco State College is one of several such structures designed recently by the California Division of Architecture. Designers claim they are cheaper and less subject to slab deflection.

Stressed Slabs Have Draped Strands

Prestressed lift slabs have been featured in the design of several recent California state college and state hospital buildings. The prestressing tendons have been draped to give the slabs more efficient resistance to imposed loads.

The State of California lift-slab work has all been designed by the Division of Architecture of the Department of Public Works. Starting in 1954, the division has had under construction or under design a total of 14 lift-slab jobs with all but one of these including prestressing. Most of the slabs have been flat plates but a few have been of the waffle type.

Selection of the lift-slab technique has been justified by an economic analysis which includes maintenance costs. An important factor in economy is a competitive situation with two lift-slab firms bidding work in all areas of California. Casting in place has been optional on all projects.

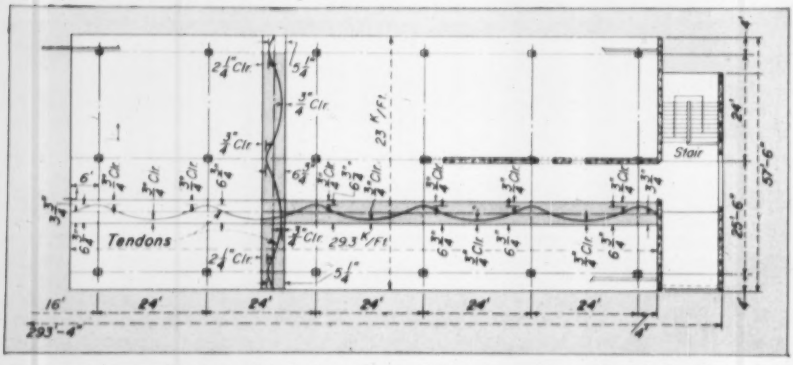
• **Designs differ**—Design of these jobs is far from sterotyped. Each project presents a different site problem and details of the lift-slabs have varied as experience has been gained.

The designers have used the lift-slab technique in many instances for classroom buildings at state colleges. They have also used these methods for ward buildings at state hospitals. And lift slabs have been used for administrative wings at both colleges and hospitals. Maximum spans have varied from 22 to 31 ft with most spans being in the 23 to 26 ft range.

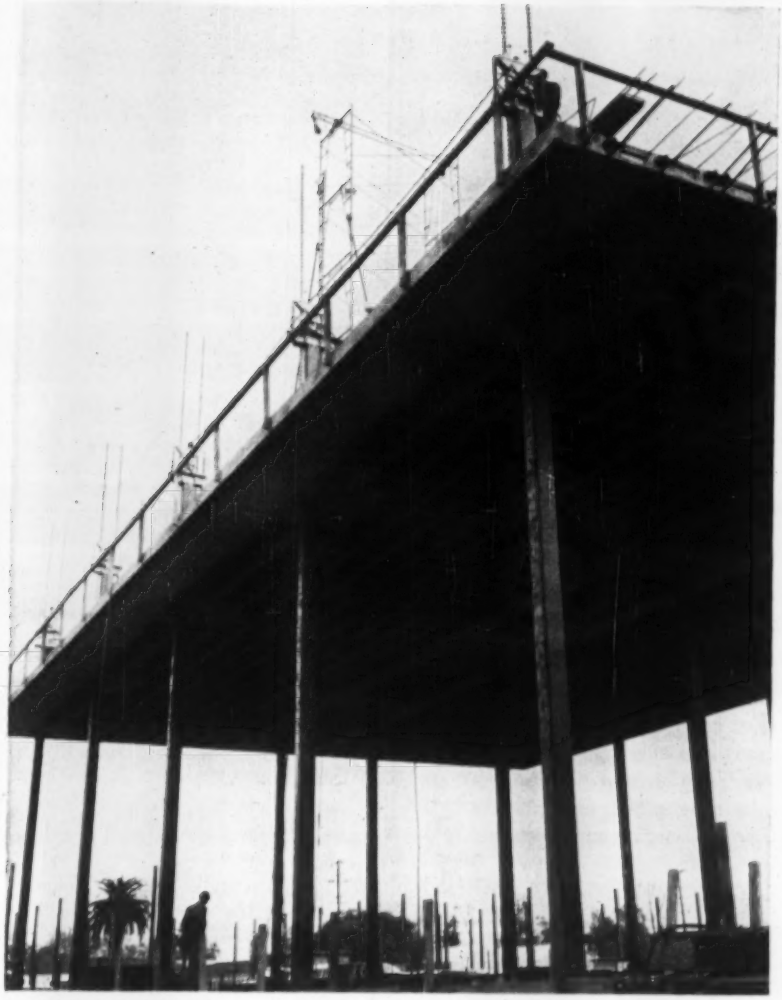
• **Flat plates preferred**—Although the California designers have employed waffle slabs in three instances, they are convinced as result of their experience that a flat plate design is better adapted to normal spans. Should long spans be encountered (more than 28 ft) they would consider a waffle design.

• **Slabs "float" under dead load**—In all of the prestressed slabs, the tendons have been draped with high points of the cable at the column centerlines and low points at the center of the spans. As would be expected, the prestressing tends to eliminate tension in the concrete. And, by draping the cables, the slab is made to "hog" or deflect in the opposite direction to that created by the dead load of the slab itself.

An effort is made to balance out these two effects as much as possible so that the floor is practically level before any live loads are imposed. One designer estimates that as a result, prestressed slabs with draped tendons will normally have less than 15% of the total deflection of a comparable concrete slab conventionally reinforced.



DRAPED TENDONS are detailed on plans. California engineers do not specify type of prestressing but only show prestress effort per lineal foot.



WAFFLE LIFT SLAB at San Jose State College was adapted to prestressed concrete. California state engineers believe waffle shape need only be used for longer spans than 28 ft.

An additional advantage of prestressed slabs, according to the California engineers, is that effects of plastic flow, creep, shrinkage, etc., are largely reflected in a loss of tension in the cables rather than the traditional sag of the slab usually attendant with normally reinforced concrete. These slabs are crack free and a large portion of the initial shrinkage is eliminated.

The designers have gone through a transition in their thinking in regard to means of specifying the prestressing effect required. They are careful to generalize such specifications as much as feasible to encourage competition among the various prestressing methods. In one waffle slab design they specified the equivalent number of ¼ in. dia wires in each web. In a later waffle slab design, they merely specified the amount of prestressing effort in each web.

On some flat plate designs they have specified only the amount and location of prestressing force required in various bands in the slab. This leaves up to the contractor the selection of tendon type and tendon spacing. The designers now feel that they must specify some form of spacing so that placing of tendons near or adjacent to openings in the slabs will be adequate. In any of these cases, the specific type of prestressing to be used and its arrangement in the slabs is subject to the approval of the responsible structural design group.

• **Flat slab job**—The flat-plate, lift-slab technique is illustrated in work nearing completion at San Francisco State College. The building in question has both two-story and three-story portions due to a side hill location. Floor slabs that are lifted are 7½ in. thick and the roof slabs are 6 in. thick. A typical floor slab in this building was 128 by 57½ ft. Longitudinal column spacing was 24 ft. In the transverse direction there were two bays, one 24 ft and the other 25½ ft. The prestressing effort specified in the transverse direction was 29.3 kips per foot of slab. In the longitudinal direction it was 23 kips per foot of slab.

The successful low bidder on the San Francisco State College classroom building—Ralph Larsen & Son—subcontracted with Prescon Prestressing Corp. for prestressing operations and with Vagtborg Lift-Slab Corp. for lifting operations. Prescon used both 10 wire and 8 wire cables. In the transverse direction of the slab, the stressing effect was provided by 10 wire cables spaced on 2 and 2½ ft centers. These cables have a working load of 64.9 kips.

To overcome the friction resulting from the draped tendons, the cables are first stressed beyond the working load (185,000 psi) and then relaxed to the initial working load. In the San Francisco State case the initial stress on the prestressing tendons was 156,000 psi. This is assumed to relax to a final working stress of 132,000 psi.

The San Francisco State College job employed 10 in. wide-flange columns that were later plaster fireproofed. Half of these columns were rotated 90 deg to provide additional stiffness for transverse loading during lifting phase.

Total cost of the San Francisco State College classroom building is just over $1 million. The Larsen general contract is for $769,213. The building has a usable floor area of 69,000 sq ft. Lift-slab area totals 64,800 sq ft including roof slabs.

• **Waffle slab**—Perhaps an even more interesting job is a classroom job at San Jose State College where waffle slabs were used. This building is a U-shaped building: the base of the U is 201 ft long, one wing 210 ft long and the other 176 ft long. Width of the wings is 61½ ft and the base is 67 ft wide. The building is three stories except that one wing of the U is built to an initial one-story height with provision for addition of a second and third story at a later date.

The waffle slab is 3 in. thick, the webs are a total of 9½ in. deep including the 3 in. floor thickness and a 6½ in. joist depth. The webs are 5 in. thick and are on 24 in. centers. Thus cardboard boxes 19 in. square were used for forming the waffles.

Spacing of the waffle webs ties down prestressing tendon spacing to 24 in. However, the additional depth of the waffle webs as compared with flat slab thickness permits the strand draping to be more effective. In this instance, the plans specified number of equivalent ¼ in. dia wires needed to make up the cables in each waffle web which varied from as few as three in the roof

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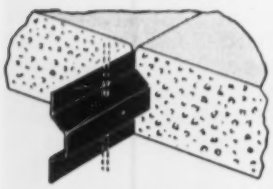

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slab to as many as seven in some parts of the floor slab. As is the case in most of the other prestressed slab designs in California, the cables are not grouted. Instead, they are coated with neoprene and wrapped in tough paper. At San Jose, initial cable overstress was again required to overcome the frictional effect in the draped tendons.

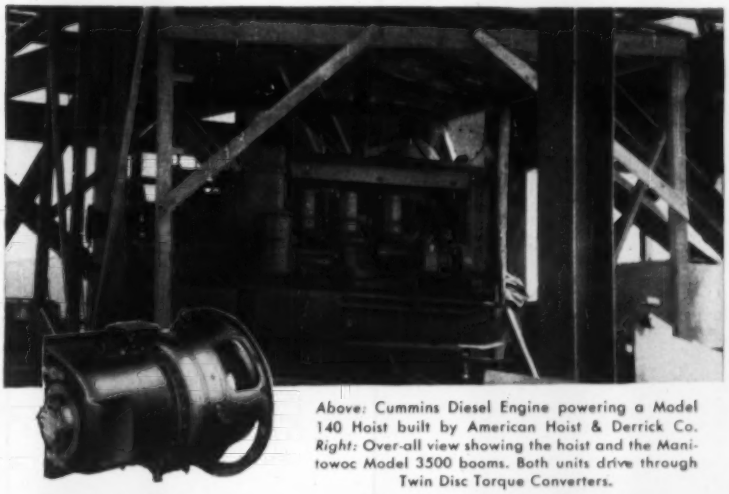
One of the wings of the San Jose State classroom building has a corridor running down the center with classrooms on each side. Temporary columns were installed along the corridor centerline for lifting purposes only. After the slabs were lifted, reinforced concrete block walls were constructed to provide support for the slabs. Then the temporary columns were removed. The upper 16 in. of the corridor walls were gunited to insure a proper shear connection between the prestressed slabs and the bearing corridor walls.

Columns on the San Jose State College classroom buildings were specified as 10½ in. square columns of ⅞ in. thickness. Such columns made by rolling seamless pipe were available at the time the design was made. But they were not available when the construction was undertaken so the columns were made of bent plates welded together.

The San Jose State College classroom building cost just under $1 million. General contractor for the $710,493 job was a joint venture of O. E. Anderson and E. A. Hathaway. Subcontractor for both prestressing and for lifting was Western Concrete Structures Co., Inc. The classroom building has a total of 62,735 sq ft gross area. A total of 65,715 sq ft of slabs were lifted in an 8 day period. The roof slab of the classroom building was lifted non-stop approximately 35 ft to the top of the columns. The lifting subcontractor claims this to be the highest uninterrupted lift ever made.

The same joint venture held a $434,639 general contract on an administration building at San Jose State College that included waffle slab floors and a flat plate roof. This building has a gross area of 38,750 sq ft. Lift-slab work totalled 37,400 sq ft.

Design of the state buildings is under the direction of Anson Boyd, who, as state architect, is chief of the Division of Architecture. Structural design and construction supervision is under the general direction of C. M. Herd, chief construction engineer, with structural design under the immediate supervision of C. Peterson, principal structural engineer, and Allen H. Brownfield, supervising structural engineer. Prof. T. Y. Lin of the University of California has assisted on this work.



Above: Cummins Diesel Engine powering a Model 140 Hoist built by American Hoist & Derrick Co. *Right:* Over-all view showing the hoist and the Manitowoc Model 3500 booms. Both units drive through Twin Disc Torque Converters.

How heavy-duty torque converters lend "gentle touch" to steel erection

At ALCOA's Warrick Works, now under construction near Evansville, Indiana, bystanders are daily witnessing two steel erecting machines performing with all the grace of an accomplished ballet dancer . . . and doing it with loads up to 29 tons!

The machines are part of the equipment operated by John F. Beasley Construction Co., Chicago. One is a Model 140 Hoist manufactured by American Hoist & Derrick and equipped with a Cummins Diesel Engine and a Twin Disc Three-Stage Torque Converter. The other is a Manitowoc Model 3500 erecting crane with a Caterpillar D17000 Diesel Engine and a Twin Disc Three-Stage Torque Converter.

The two erecting machines are working on 16-story structures for a power plant. The work requires very delicate steel setting . . . such as setting 17-ton cross members between columns and then, with a steel ball weight, gently tapping them into place.

As E. J. Delahousay, of John F. Beasley Construction Co., puts it: "With Twin Disc Torque Converters, you can swing fast . . . and lift without fear of engine stall. They make the machines handle easier and enable the operator to place his load just where it has to go!"

Twin Disc Torque Converters are excellent for delicate holding and inching of loads through simple throttle manipulation. Besides this, however, they prove their worth in many ways . . . such as permitting engines to operate in their most efficient speed range at all times, with full hp output available whenever required . . . automatically matching engine torque to load requirements . . . cushioning out destructive shocks and vibrations between driving and driven equipment . . . and holding constant tension on cables, for greatly increased cable life.

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1
2
1 Compare lifting capacities with boom at extended radii . . .
2 not at minimum radius where little work is actually done

TRUCK-CRANE PRODUCTION: Most truck-crane jobs require using long booms at extended radii. Under these circumstances, Link-Belt Speeder machines are unsurpassed. Why? Because of high strength-alloy booms and new high-capacity jibs, extra "live" weight, strategically located uppers for better balance and stability plus advanced-design features such as clutch *up* and *down* on boomhoist.

Extending truck-crane utility

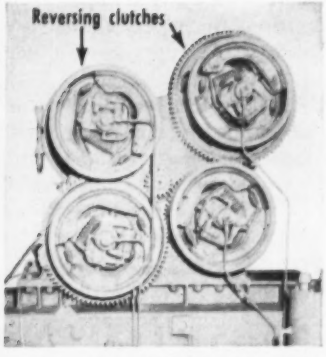
With new increased lifting capacity at extended radii plus outstanding mobility, Link-Belt Speeder Zephyr-cranes handle many jobs formerly handled by crawlers

Truck-crane production is directly related to lifting capacity. But lifting capacity varies with boom length and radius.

Thus, it's important to measure capacity on the basis of a boom out 25 feet and beyond where the bulk of the work is done. You'll be amazed to find that a Link-Belt Speeder far outperforms other similarly rated machines.

It's one of many ways a Link-Belt Speeder helps set new, more profitable standards of truck-crane operation. Contact your Link-Belt Speeder distributor or write for details. LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA.

FAST, POSITIVE, SAFE CONTROL—True power hydraulic controls are a Link-Belt Speeder exclusive . . . utilize oil under pressure to do the work. The operator merely flips short-throw levers. Smooth-operating hydraulic-actuated clutches provide perfect feel of the load at all times.



LOAD LOWERING CLUTCHES—Hydraulic-actuated reversing clutches are available for either or both main drums. They provide power load lowering of main hoist line and jib whip line. All clutches are interchangeable within a given machine . . . are self-adjusting for heat and normal lining wear.

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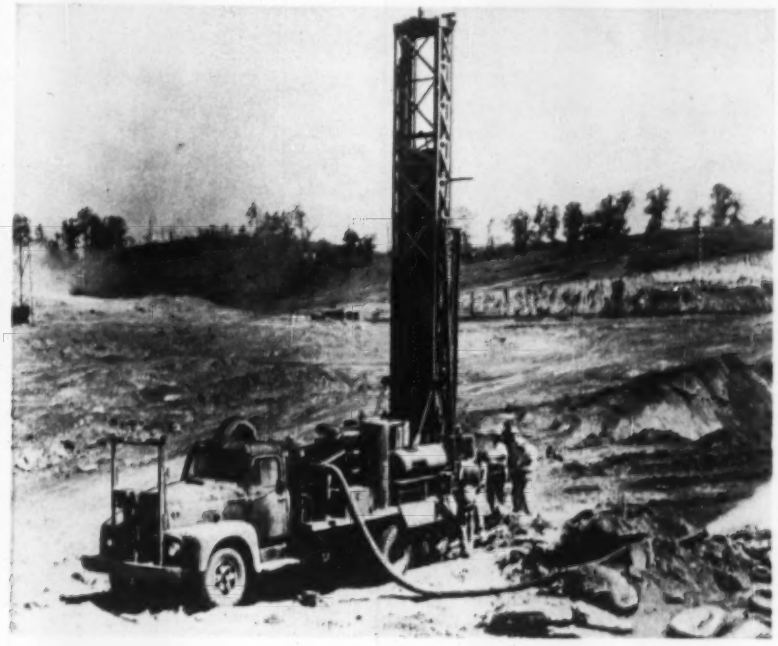
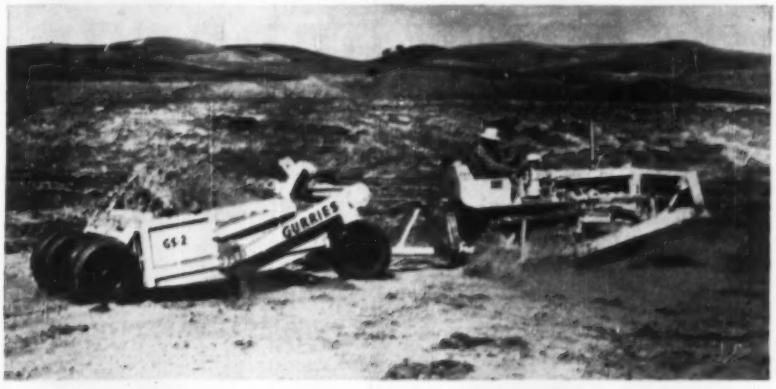


Truck Mounted Drill Is Mobile, Fast

A new truck-mounted rotary drill that features mobility and rapid set-up has been announced recently by Schramm, Inc.

According to the manufacturer, actual field reports show that this unit, known as the Schramm truck-mounted Rotadrill, makes holes 600 to 700% faster than has been possible with the best churn drilling technique.

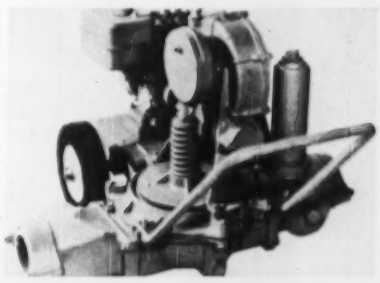
Rotary air drilling is accomplished through a reversible hydraulic motor-driven head mounted on a carriage that rides tracks mounted on the mast. SCHRAMM, INC., 900 E. VIRGINIA AVE., WEST CHESTER, PA.



Tiny Scraper Built for Small Tractors

A scraper with capacities of 3.60 cu yd. struck and 5.0 cu yd, heaped, has been built to match the power of Caterpillar D2 and D4 tractors.

A hydraulic cylinder raises and lowers the bowl, a shallow angle blade cuts draft and permits a heaped load with minimum power, the manufacturer says. The machine, known as GS-2, takes a 7 ft cut, with its rear wheels tracking inside the cut. It is said to fill a place in the scraper line as low-cost companion equipment for the smaller track-type tractors. GURRIES MANUFACTURING CO., 1720 S. FIRST ST., SAN JOSE, CALIF.



Power Digger Designed For Ford Tractor Line

A power digger, specially designed for mounting on Ford tractors is now on the market.

According to the manufacturer, the unit features fast digging and long life.

Some of the features include a breakout capacity of 9,000 lb, a wide work radius and long reach. The machine can excavate a trench 15 ft 8 in. long from one tractor position, with an arc of swing of 188 deg, and with a reach below grade of 12 ft. SHERMAN PRODUCTS, INC., ROYAL OAK, MICH.

FWD Markets Carrier Line For Construction Industry

An improved line of commercial carriers for crane, shovel, backhoe and dragline manufacturers has been introduced by Four Wheel Drive Auto Co., Clintonville, Wis.

Primary carrier designed for the commercial field is a 15 ton 6x4 model, but the line also includes 25 and 30 ton carriers and the company will design other units to meet individual requirements. FWD also is offering its heavy-duty axles for use in production of four wheel drive wagon cranes.

Engine options include 150 hp BD-308, 212 hp RD-501, and 216 hp 145GK gas engines plus several diesel models in the same horsepower ranges.

In addition to all-steel construction, the carriers feature one-man cab alongside engine styling and heat-treated channel steel frame, reinforced throughout with weight maintained at minimums to meet state regulations. Basic carrier drive system is 6x4 with independent power to each of the two rear axles. Six-wheel-drive carriers are included, featuring the power-proportioning center differential.

The commercial carriers have removable sliding outriggers, and are available with 5 or 10 speed transmission in addition to engine and wheelbase options. FOUR WHEEL DRIVE AUTO CO., CLINTONVILLE, WIS.

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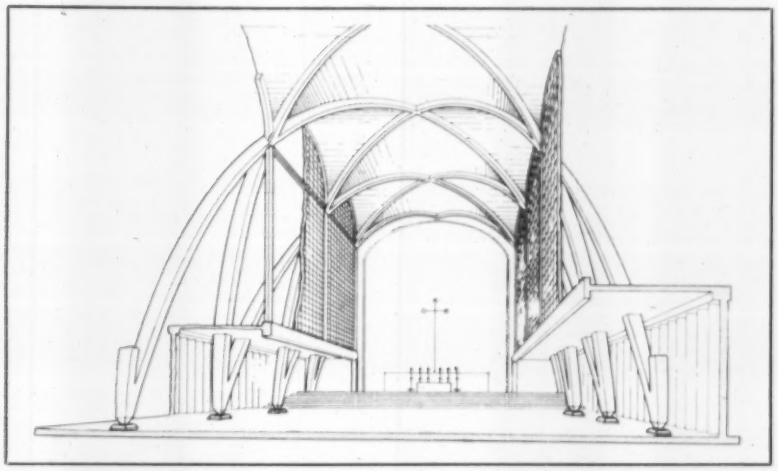


Formed of intersecting concrete ribs . . .

Arch Network Frames Church

The vaulted fretwork ornamenting the groined ceiling of the new Church of San Jose, Medellin, Colombia, could easily mislead the casual viewer. The arched diamond pattern might be mistaken for skewed arches springing from the top of the clerestory.

Actually, though, the segments visible inside the nave are only the upper portions of reinforced concrete arches that continue down to the ground. Going from indoors to outdoors at the top of the clerestory on each side, the ribs are exposed to the weather for a portion of their length. Then they re-enter the building through the low roofs of the side aisles.

As seen in plan, the arches crisscross the building at 45 deg with the axis of the structure.

Spacing of the arch footings, measured parallel to the building axis, is 36 ft c-c; while directly across the building, it is 72 ft c-c. This accounts for the off-center intersections of the ribs, which spring in pairs from each foundation. Intersections occur at quarter-span-points and at midspan.

Besides the network of skewed arches, the building frame also includes a series of concrete ribs along each side of the nave. Supported at the quarter-span intersections of the main arches, these secondary ribs span the ends of the lateral vaults of the ceiling and support the clerestories and the side-aisle roofs.

For the latter purpose, reinforced concrete verticals are suspended at 12 ft intervals from the secondary arches. These verticals support at their lower ends, along each side of the church, a reinforced concrete girder. This member supports one end of the side-aisle roof beams; and it also carries the clerestory, which is made up of precast concrete blocks, each with an opening for a glass pane.

In the construction photos (at right), brick piers may be seen supporting the suspended concrete girders just described. The piers were temporary, however, and at a later date, they were removed.

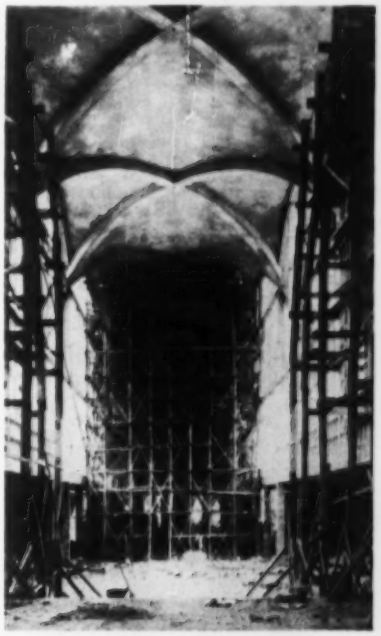
The foundations of the main arches are concrete-pile clusters. Each cluster is capped with a square-based concrete pyramid, with its apex cut off to accommodate a 4 x 4 in. steel bearing plate. Welded in an inverted position on the bearing plate is a similar truncated pyramid fashioned from steel plates. Out of this base receptacle, the pair of concrete arches springs.

Reinforcement at the arch base consists of twelve 1 in. steel bars, which meet in a welded connection near the pyramidal tip. Instead of detailing the base on paper, the designers constructed a model for the use of the contractor.

Rising from a 20 x 20 in. cross section at the base, the arches deepen to 20 x 32 in., then taper at the crown to 20 x 20 in. again.

The main-rib profile is compounded from five circular segments. The highest point is 59 ft above the nave floor.

Overall the church is an 85 x 256 ft rectangle. The high central part of the nave is 36 ft wide; the side aisles are 24½ ft wide and 15 ft high. Seating capacity of the building is 1,800.



INTERSECTING RIBS mark nave ceiling with a diamond pattern in relief.

ARCH BASE 20x20 in. is springing point for two ribs at right angles.

Roof decks are concrete, waterproofed with asphalt. Walls, except for window areas, are red brick.

Owned by the Christian Brothers order, the church was designed by Nel Rodriguez, architect. It was built by the Medellin contracting firm of Suarez, Gomez & Arango, Limitada. Total cost was about $200,000.

(International continues on page 48)

Construction Is Under Way On 190 Foot Canadian Dam

Construction is now under way on a 190 ft high dam and powerhouse that are part of British Columbia Electric Co.'s $56.5 million second stage Bridge River Project. The dam is located 20 miles from the mouth of the Bridge, which empties into the Fraser River 110 miles northeast of Vancouver.

A $25 million contract for the dam and powerhouse was awarded last month to Northern Construction and J. W. Stewart, Ltd., Vancouver. This is the firm that won an earlier Bridge River contract—a $9 million tunneling job.

The dam—yet unnamed—will rise 190 ft from bedrock to crest, and it will be 1,475 ft long at the crest. It was designed with a base almost as thick as it is long—1,000 ft thick, 1,200 ft long.

The structure will be rock-fill, with an impervious upstream blanket. Some 3 million cu yd of rock fill, clay, riprap and bottom filter will be used.

The powerhouse will be located on Seton Lake, at the terminus of a 2½ mile tunnel conveying impounded Bridge River water into the lake. It will be equipped with four 62,000-kw generators. A 1,400 ft head will be developed at the powerhouse.

The current project, second stage of BCE's development of Bridge River, is to be finished by 1960. The company operates 282 ft high LaJoie Dam, 45 miles upstream from the new dam.

Guatemala Highway Section Ready for Second Contract

Months of rain—and resultant slides—will necessitate a second contract to complete the rugged "El Tapon" section of the Inter-American Highway in Guatemala, it became apparent last week.

The rock slides and the second contract—after one contractor had moved more than 2.3 million cu yd of material on a 9.4 mile stretch—were part of the original plan. But the extra cost may be higher than was estimated.

The road in question is the center of a 25 mile sector of the highway through Guatemala, and is known as El Tapon (The Plug) since it is one of the last barriers on the highway between the U.S. border and Costa Rica. Initial work, under an original contract (later increased) of $1.2 million, was completed late in 1956 (ENR Jan. 17, p. 62). When the contractor finished, it was recognized that constant earth slides of the granular material making up the rugged hills of the area would continue. Engineers for the U.S. Bureau of Public Roads and the Guatemalan Public Works Ministry decided to let the slides continue until a permanent slope was reached, then clean out the debris.

That point seems to have been reached, and contract work on the two ends of the section is nearing completion. The problem now is partially financial—Guatemala is apparently having trouble meeting its one-third share of the cost of the project, and some estimates place the final cost of the whole road section at $3 million more than originally planned.

Highway Congress

Plans complete for August Inter-American meetings

Plans have been completed for the seventh Pan American Highway Congress, to be held in Panama Aug. 1-10. More than 500 government officials, highway engineers and observers are expected from every country in the Western Hemisphere except Canada.

In addition to general reports from various countries on the progress of the 20,000 mile highway between Alaska and the Argentine—90% of which is now open—there will be detailed reports and discussions on highway engineering. Highway engineering includes national highway programs and plans such as special-type highways, surveys, design, geometric elements and general specifications.

The use and application of aerial photogrammetry for highways will be discussed.

Technical papers on soil studies, application of soil mechanics and materials used in the construction of highways will be presented.

Other items on the agenda include earthmoving, road embankments, construction methods, sub-base compaction and preparation, highway structures and specifications.

A detailed engineering report regarding routing of "Darien Gap" in the Inter American highway connecting Panama and Columbia will be submitted. Surveys of Panama's Darien region have been underway since August, 1955, by the internationally-financed Darien Sub-Committee of the Executive Committee of the Pan American Highway Congresses. Cost of closing the "Darien Gap" is estimated at somewhere between $70 and $100 million.

The gap project represents about 2.3% of the total mileage of the international highway and should take approximately five years to complete.

Wright Retained to Design Opera House in Baghdad

Frank Lloyd Wright has been retained as consultant on design and specifications for a new opera house to be constructed in Baghdad. Cost of the building has not been determined.

The opera house will be constructed by the Iraq Development Board, an independent government agency that utilizes 70% of the country's oil royalties for development projects.

The opera house is the board's first cultural project. Economic facilities provided by the board in the past include flood control and irrigation dams, highways, bridges and new industries.

Nigerian Airport Boasts New Terminal

Kano International Airport, in Nigeria, now boasts Africa's newest air terminal. Among the best in the continent, according to reports from the Federation of Nigeria, the $1.1 million facility was officially opened by Sir James Robertson, governor general of the British protectorate and colony.

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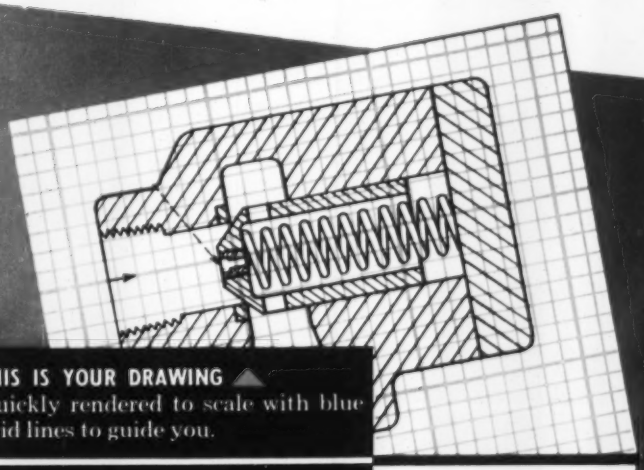

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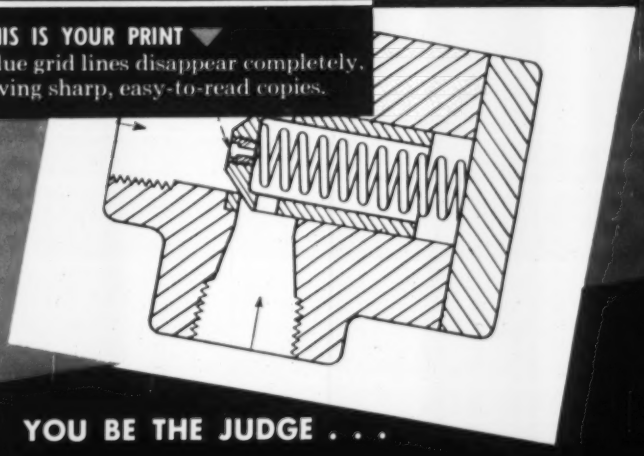

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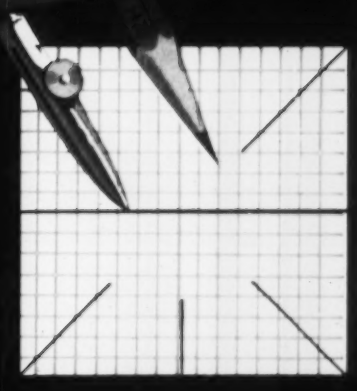

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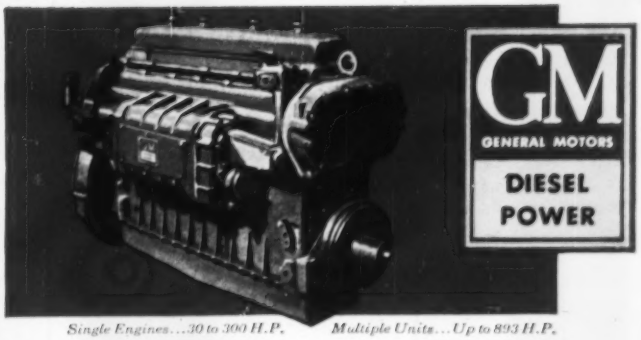

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Engineer Corps Sets Up Pacific Ocean Division

A new Corps of Engineers' division, the Pacific Ocean Division, has been organized, with headquarters in Honolulu. It will be headed by Brig. Gen. Ellsworth I. Davis, deputy commanding general of the Engineer Center at Fort Velvoir, Va.

The new division will have responsibility for contract construction in Korea, Japan, Taiwan, Okinawa and the Territory of Hawaii. Three districts and their commanders under the new division are: Okinawa District, Col. George E. Finley; Far East District, Col. Stephen E. Smith; and Honolulu District, Lt. Col. McGlachlin Hatch.

Canadians Honor Fleming, Pioneer Railroad Engineer

One of the best known Canadian engineers, Sir Sandford Fleming, was honored recently in Ottawa when a commemorative tablet was unveiled at the Dominion Observatory.

He is best remembered by Canadians for his work as chief engineer of the Northern Railway (1852-63), Intercolonial Railway (1863-76) and Canadian Pacific Railway (1871-80). In the last capacity he surveyed CPR's present route through Yellowhead Pass, and demonstrated feasibility of routes through Kinking Horse, Eagle and Rogers Passes.

E. A. Verpillot Retires, Top N. Y. Port Engineer

Emil A. Verpillot, deputy chief engineer of the New York City Department of Marine and Aviation since 1947, will retire June 21, after 36 years service with New York City. Mr. Verpillot will join Wigton-Abbott Corp., engineers and builders of Plainfield and Newark, N. J., as assistant to the president.

From 1940 to 1946, Captain Verpillot served with the Navy's Civil Engineer Corps, and was in charge of construction of the $70 million Bayonne Naval Base in New Jersey. During his naval career, he was also in charge of construction and supply contracts for Alaskan Naval Air Bases; deputy director of the Alaska Division for the Bureau of Yards & Docks; deputy superintending civil engineer for the Navy in Washington, Oregon, Idaho, Montana and Wyoming.

Early in his career he worked for the American Telegraph and Telephone Co., and the Board of Education as an engineer. In 1922 he joined the staff of the Department of Plant and Structures, from which the Departments of Public Works and Marine and Aviation later were formed.

C. M. Anson (left) succeeds V. A. McKillop

New President For Canadian Institute

Clement M. Anson of Sydney, Nova Scotia, has succeeded Vernon A. McKillop of London, Ont., as president of the 17,000-member Engineering Institute of Canada. The newly elected officers and councillors of the institute were inducted into office at the recent 71st annual meeting of EIC held at Banff, Alberta.

Mr. Anson is vice president and general manager of Dominion Iron & Steel, Ltd., James Pender and Co., Ltd., and Dominion Shipping Co., Ltd. He has been a member of the Institute since 1931, serving as vice president in 1946-1947.

Careers

Business

Harold I. Howell, chief system project engineer of the Niagara Mohawk Power Corp., becomes staff engineer, moving from the Buffalo office to Syracuse. **J. Norton Ewart** succeeds Mr. Howell. **Earl B. Strowger,** chief hydraulic engineer for Niagara-Mohawk, becomes engineer in charge of hydroelectric stations. **Franklin S. Helfter** becomes engineer in charge of steam electric stations.

Leonard Lampert starts his own consulting engineer business at Stevens Point, Wis., after resigning as construction manager at Hardware Mutuals.

Government

Lawrence E. McCartt becomes superintendent of District 1 sewage works at Covington, Ky., replacing **Thomas S. Danks,** who retires.

E. Ogden Driggs is project manager for the Richmond, Calif., Department of Public Works' $8 million sewerage construction program.

George Fellows is appointed director of public works at Pueblo, Colo., succeeding **Glenn S. Turner,** who is appointed city manager.

Associations

William V. Krewatch is the new president of the Delaware Society of Professional Engineers, succeeding **James H. Hallett, Jr.**

Education

John T. Howard has been appointed head of the Department of City and Regional Planning at Massachusetts Institute of Technology.

TRU-LAY *flexible* PUSH-PULLS

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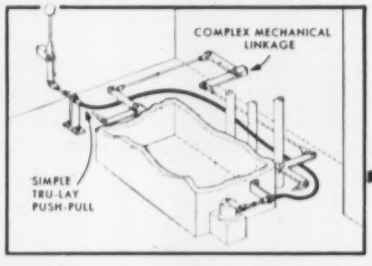
TRU-LAY PUSH-PULLS are dependable and accurate even under the most adverse conditions

They perform effectively under extremes of heat or cold . . . from jet engine temperatures to 70° below zero F. The inner, working member (lubricated for life during assembly) is fully protected by the tough, flexible conduit. Abrasive dusts, dirt and moisture are sealed out. Fittings are cold-swaged to make them integral parts of the control unit. It is a matter of record that we have never heard of a TRU-LAY *flexible* PUSH-PULL wearing out in normal service. Use of these versatile, simple and rugged controls increases ease of operation and means the virtual elimination of maintenance.

Advantages of Tru-Lay Push-Pull flexibility and simplicity are pictured below

Simplicity vs Complexity

Compare the TRU-LAY PUSH-PULL cable in illustration with the mechanical linkage. PUSH-PULLS are simple, have but one moving part, are noiseless and give lifetime service accuracy. Linkages are complex, made of many parts; they wear at many points. Their use brings increased backlash, lost accuracy and vibration rattles.



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Obituaries

Harry J. Carlson, 87, retired Boston architect, died June 16 in Newton, Mass. He was a partner in the firm of Coolidge & Carlson from 1903 until he retired in 1950. He graduated from Massachusetts Institute of Technology in 1892 and subsequently studied in Paris and New York.

Lester C. Hammond, 76, retired engineer, died June 10 in Cleveland. He was chief engineer for the Borough of Manhattan, New York City, for eight years during Mayor Fiorello H. LaGuardia's administration and also was chief engineer of the New York World's Fair.

Gus Rayner, 67, former executive secretary of the New York State Bituminous Concrete Producers Association, died June 8 in Albany, N. Y. A highway construction engineer, he also had served as executive secretary of the Virginia Road Builders Association and as national field representative of the Associated General Contractors of America.

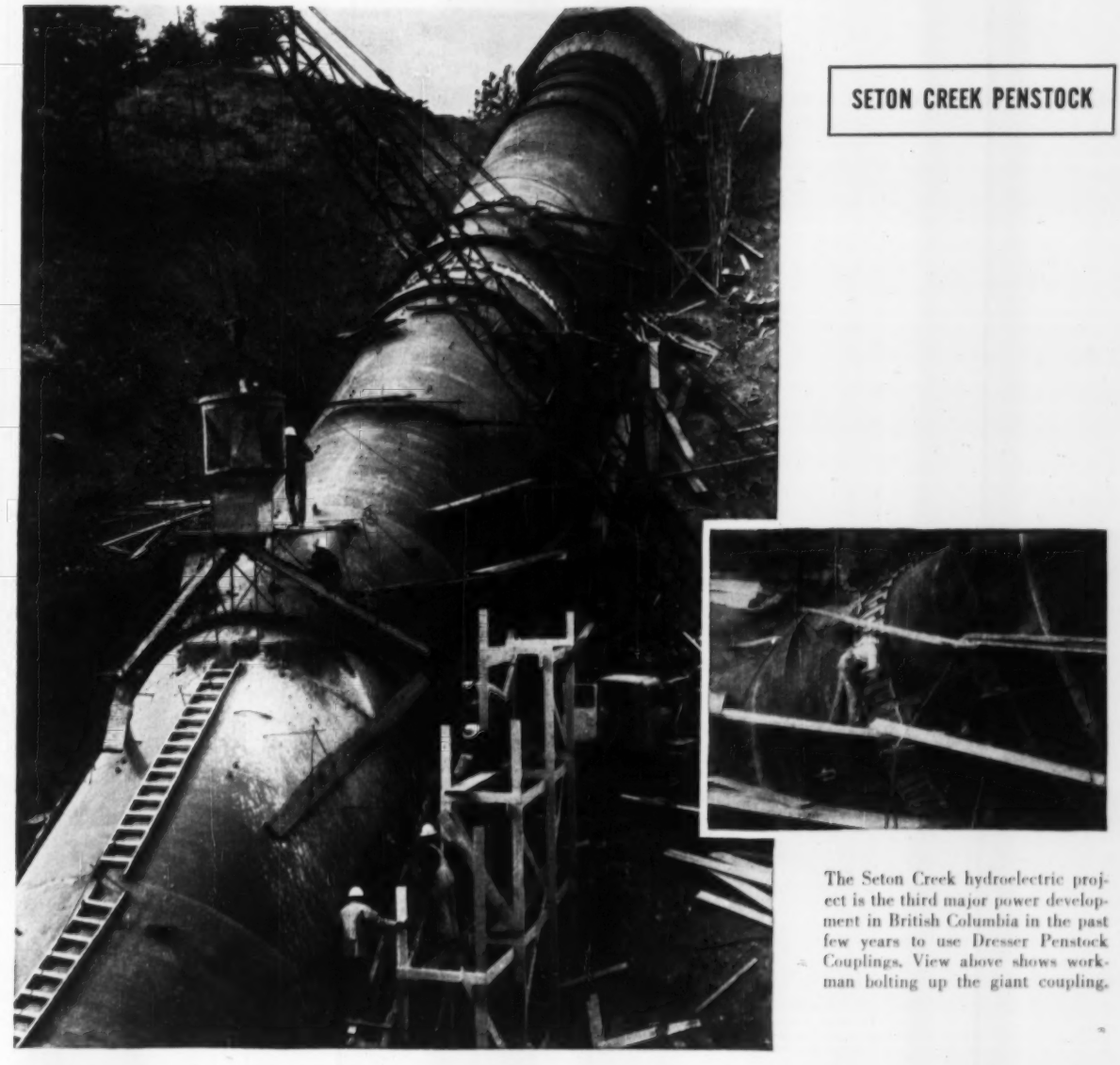
Fred A. Libes, 69, demolition contractor of Winston-Salem, N. C., died June 5. The Fred A. Libes Demolition Co., which he headed, has been razing buildings in Winston-Salem and other parts of North Carolina for the past 49 years to make way for construction projects.

Arthur A. Smith, 77, chief engineer with the Ontario Department of Highways, died recently in Toronto. In 1920 he became district engineer in charge of all highways in eastern Ontario; in 1925, assistant chief engineer; and, in 1928, chief engineer, remaining in that post until retiring in 1951.

Samuel Bossart, a civil engineer and one time secretary of the Erie City Planning Commission, died June 5 in Erie, Pa. He recently served as consultant with the Millcreek Township Planning Commission.

Arthur W. Howson, 63, a partner in Alvord, Burdick & Howson, Chicago consulting firm, died June 3. A colonel with the Corps of Engineers during World War II, Mr. Howson saw duty in Saipan and Okinawa in hospital, airfield and base depot construction. He had served with the Illinois Central Railroad from 1916 to 1946. His older brother, Louis R. Howson, senior partner in the consulting firm, was nominated for the presidency of the American Society of Civil Engineers early this month.

SETON CREEK PENSTOCK



The Seton Creek hydroelectric project is the third major power development in British Columbia in the past few years to use Dresser Penstock Couplings. View above shows workman bolting up the giant coupling.

Coupling at Seton Creek had to have give and take!

At the Seton Creek hydroelectric project in British Columbia, this huge 218″ OD penstock was engineered to flex with the ground, to contract and expand with temperatures varying as much as 120°.

The 3-section Dresser Penstock Coupling was used to flex *with* this movement while providing a bottle-tight joint under a design pressure of 55 psi. (Segmental-type couplings can be designed to withstand much higher heads.)

The middle ring, made of 1¼″ ASTM, A285 steel, was segmental type and field welded at the job site. With this in place, wrenches were the only tools needed to secure the segmental ⅝″ wall cast steel followers. (See photo inset above.)

The on-the-job versatility of Dresser factory-made joints eliminates such problems as exact pipe fitting, slight misalignment of pipe ends and expansion-contraction stresses. The non-rigid features of Dresser Couplings provide the give and take necessary to protect the piping in service, assuring low maintenance.

Dresser Penstock Couplings are engineered for pressures and other factors of individual penstock projects. For valuable engineering data on other successful Dresser-coupled steel penstock installations, send for illustrated penstock brochure. Write: Dresser Manufacturing Division, Bradford, Pa. Sales offices in: New York, Philadelphia, San Francisco, Chicago, Houston, Denver, Toronto and Calgary.

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ELECTRIC PLANT NEWS

Onan ELECTRIC PLANTS

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It's a completely electrified operation . . . even to electric lights in the mobile office nearby . . . yet this bulk cement plant is far distant from the utility highline. The Onan heavy-duty, water-cooled electric plant runs continuously during working hours with a minimum of servicing. It has the capacity to provide electricity for miscellaneous lights, tools, motors and communications, too.

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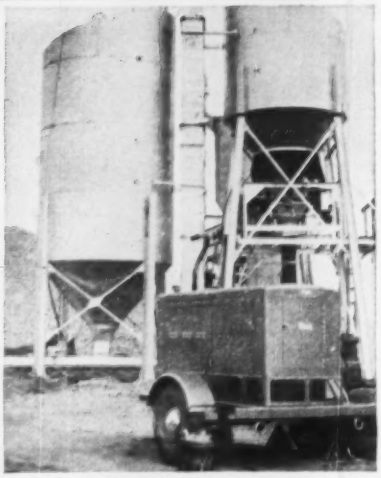

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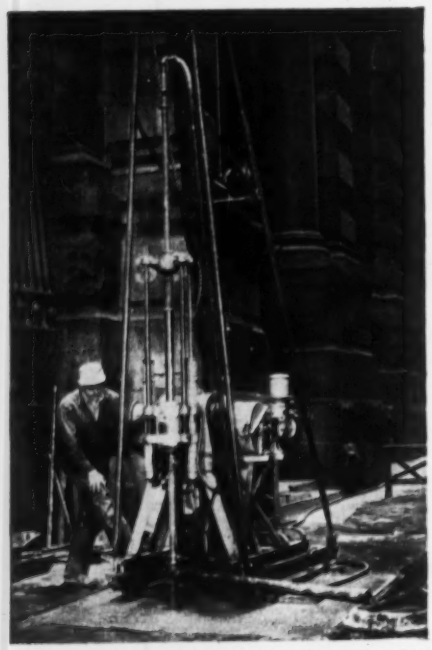

This Acker Teredo Drill is Making Foundation Test Borings preparatory to Erection of a New Skyscraper.

on the sidewalks of New York

Here's one of two Acker Teredo Diamond Core Drills on the job for Raymond Concrete Pile Company, making foundation test borings in the heart of the busy financial section of New York City. As repeat purchasers of Acker drills, Raymond knows the dependability, compactness and versatility that characterizes Acker **design.**

For prices and information, write for Bulletin 30, ENR.

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Books

Plastic Design Theory

THE PLASTIC METHODS OF STRUCTURAL ANALYSIS—By B. G. Neal. 353 pp. John Wiley & Sons, Inc., N. Y., N. Y. $7.50.

Plastic theory makes possible the use of the reserve strength possessed by structural steel beams stressed beyond the yield point at any section. Use of plastic methods for steel design has been permitted in Great Britain since 1948, as a consequence of research work carried out and experience gained in that country. The book reflects the author's acquisition of knowledge of this subject beginning with the pioneering stages in this field, since much of it was written when he worked under Prof. J. F. Baker at Cambridge University.

The text develops plastic theory along a pattern that now is becoming conventional—presentation of an idealized stress-strain diagram, discussion of the development of plastic hinges, formation of mechanisms and determination of ultimate load by application of the principle of virtual work (ENR April 4, p. 38). Methods of estimating the effects of normal and shear forces and of computing deflections also are given.

The effect of variable repeated loading is discussed in the last chapter. The author concludes that "unless a design is governed by fatigue, the recommended plastic design procedure, in which a specified load factor is provided against plastic collapse, will generally result in a structure which is far less likely to fail by incremental collapse or alternating plasticity than by plastic collapse under a single overload. It is interesting to note, however, that Parkes has shown that the stresses set up in aircraft wings due to repeated temperature changes can cause failures by incremental collapse or alternating plasticity, and the possibility of the occurrence of these types of failure has become an important criterion in the design of high-speed aircraft."

New Book of Tables

HYDRAULIC AND EXCAVATION TABLES—U. S. Bureau of Reclamation. 345 pp. Available from U. S. Government Printing Office, Washington, D. C. $2.00.

The eleventh edition of this book, first issued in 1905 as a 76 page booklet, is considerably increased in size over the tenth edition that came out in 1950. Many new tables have been included—there are now 71 compared to 49 in the previous edition.

10,000 MILES

U.S.A. PAKISTAN

"We shipped our GMC's 10,000 miles to handle this truck-killing job"

Oman-Farnsworth-Wright report on 114 GMC's working their giant Pakistan construction job

YOU have to have real confidence in a truck to ship it nearly half way round the world for a vital job.

"We knew GMC's were our best bet," says the report. "After all, they've been breezing through Oman Construction Company's biggest projects in the U. S. since 1929. And they've never had to be pampered."

How well have they stood up on the grueling Pakistan job? Though many of them work 24 hours a day – through 7-day weeks – under far from ideal conditions – they've kept the fast-moving operation right on schedule. "The GMC's have certainly lived up to our expectations," says the organization.

Actually, that's pretty typical of GMC users' reports. You see, every GMC 6-wheeler is designed and built for the toughest job in the construction field. You can collect their money-saving – money-making – benefits right up to 90,000 GCW. See your GMC dealer!

GMC TRUCK & COACH—*A General Motors Division*

MOVING MILLIONS OF YARDS OF FILL—on a tight, grueling schedule—is no problem with rugged trucks like these GMC W503's at work in Pakistan. There's the power-reserve to pull through *anything* in their new 206-h.p. V8 engines. There's stamina to spare in brawny frames and a 28,000-lb. rear axle. And that's typical of the super-toughness engineered into every GMC construction hauler. The company operates 70 of these 6-wheelers, and 44 other GMC's.

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Connecticut Sewer Runs Into Soil Problems

Poor subsoil under this 1,030 lin ft sanitary sewer makes pumping necessary also a crushed stone bed and gravel backfill. Pipe will be placed at an average depth of 9 ft in former meadow land that has been filled in and an existing 24 in. storm sewer must be shored up. This is the Mitchell Drive Sanitary Sewer for the City of New Haven, Conn. William M. Bolton is city engineer.

The $15,710 contract to S. D. & W. Construction Company of Hartford is 21% under both the engineer's estimate and the only other bid.

The city furnishes castings for manholes and catch basins.

Cl A is 1:1½:3 concrete, cl B, for fill, is 1:2:4.

Wages prevailing on this job include: for shovel operators $3.20 plus $0.10 fringe benefits; for tractor operators $3.00 plus 0.10; skilled pipe layers $2.50 plus 0.07; truck drivers and common laborers $2.05 plus 0.05.

The two bidders are:

1C S. D. & W. Construction, Hartford, Conn.	$15,710
2 NH. Sewer Construction & Engineering, New Haven, Conn	19,918
EE William M. Bolton, New Haven City Engineer	20,000

Bids: 3-18-57 Items	Unit	Quantity	Unit Prices 1C	2
RCP, 12" sanitary	lf	1,030	$8.00	$12.00
CIP, 8", force main	lf	335	6.50	7.00
Manhole, concrete, install	ea	10	165.00	200.00
Excavation, rock	cy	10	10.00	10.00
Sleepers	ea	285	0.50	0.50
Hubs	ea	25	4.00	4.00
Stone	t	200	3.50	5.00
Gravel	cy	150	1.50	2.00
Sheathing	M	10	100.00	1.00
Concrete, cl A	cy	5	20.00	15.00
cl B	cy	5	15.00	25.00
Calcium chloride	t	5	60.00	1.00
Pavement	sy	900	1.00	1.50

Time to complete: 75 calendar days
Liquidated damages: $50 per day

Sanitary Sewers for Jaffrey, New Hampshire

These intercepting sewers to remove pollution from Contoocook River, Jaffrey, N. H. have a U.S. Public Health Service grant and aid. Camp, Dresser & McKee, Boston, Mass. are the consulting engineers.

There will be 6,000 lin ft of 18 in. and 15,000 lin ft of 12 in. intercepting sewers in the $111,225 contract to James A. Munroe & Son, Inc., the low of 9 bidders. His price is less than 2% under the second bid and 16% under the engineer's estimate. Reinforced concrete culvert pipe is used on the 18 in. line and extra strength vitrified clay pipe on the 12 in.

Minimum wages to be paid range from $3.25 per hour for skilled workers, $2.70 for semi-skilled to $1.50 for unskilled.

Bidders include:

1C James A. Munroe & Son, Inc., No. Attleboro, Mass	$111,225
2 D & F Contractors, Brockton, Mass	113,270
9 C. DiMartino & Sons, Inc., Hyde Park, Mass.	183,035
EE Camp, Dresser & McKee, Boston, Mass	132,900

Bids: 5-23-57 Items	Unit	Quantity	Unit Prices 1C	2
Excav & backfill 0-10 ft	cy	6,400	$2.00	$2.00
under 10 ft	cy	330	15.00	6.00
rock	cy	300	15.00	13.00
RCCP, T&G 18"	lf	6,150	6.50	7.00
VCP, ES, wtr tgt premol jts, 12"	lf	1,500	5.00	6.00
8"	lf	550	3.60	4.00
4"	lf	250	6.00	3.00
Y-branches, VC, ES 12"x4"	ea	12	20.00	10.00
8"x4"	ea	3	20.00	10.00
Y-saddle, VC, ES 4"	ea	8	15.00	10.00
Manholes, brick	vf	230	40.00	40.00
concrete	vf	100	40.00	30.00
Pavement, temporary	sy	80	2.50	2.00
Crossings, railroad	ls	1	5,000	15,000
stream	ls	1	12,000	8,000
Miscellaneous & cleaning up	ls	1	4,000	4,000

New Street for East St. Louis, Illinois

Starting from scratch this new street will get 2,200 lin ft of Portland cement concrete 10 in. pavement, 36 ft wide with Type 4 concrete curb and necessary drainage facilities. It is 47th Street, East Saint Louis, Ill. David J. Johnston is the consulting engineer. The contract to Keeley Bros. Construction Co. at $141,202 is less than 1% under the second bid in very close bidding. It is 4% over the estimate.

Hauling materials through city streets subject to traffic delays is the principal complication in sight.

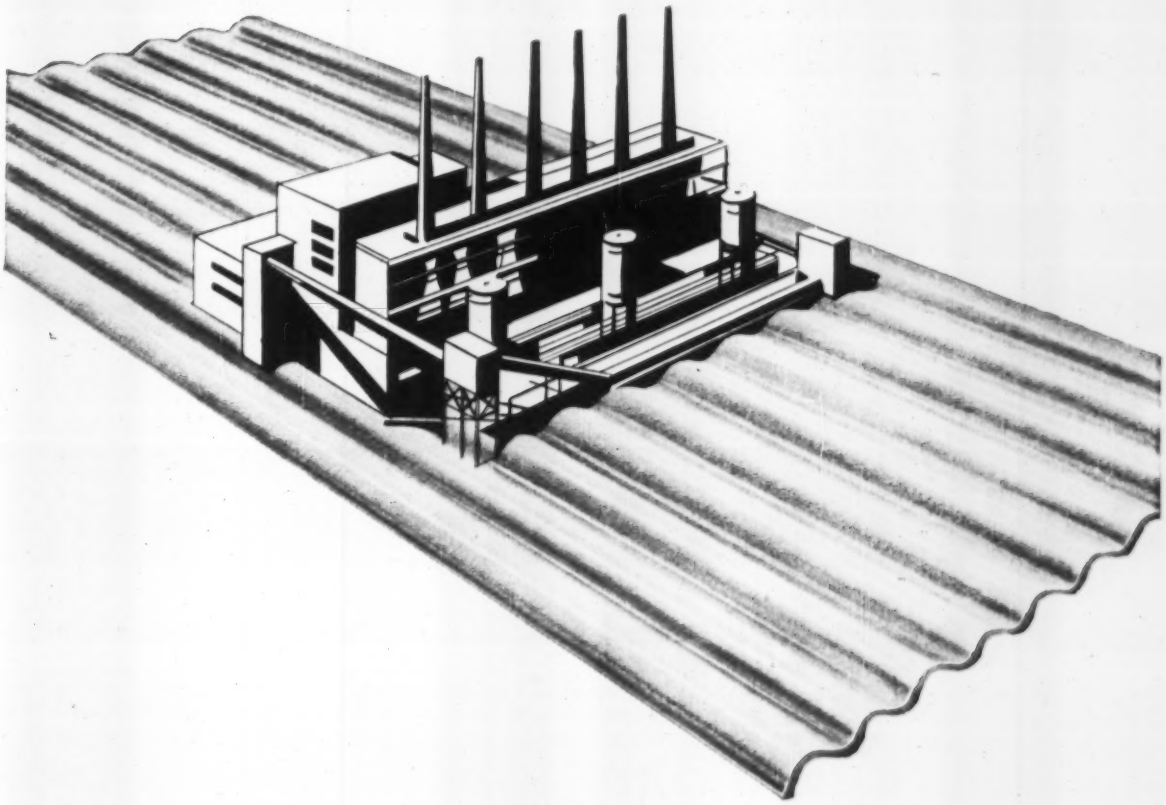
Wages range from $2.75 for common labor to $3.275 for semi-skilled to $3.525 per hour for skilled workers. Equipment operators get $3.55.

The three bidders are:

1C Keely Bros. Constr. Co., East St. Louis, Ill	$141,202
2 Joseph P. Kelley Constr Co., E. St. Louis, Ill	142,260
3 H. H. Hall Constr. Co., East St. Louis, Ill	142,999
EE David J. Johnston, Consulting Engineer	135,515

Bids: 5-8-57 Items	Unit	Quantity	Unit Prices 1C	2
Excavation, earth	cy	5,812	$1.00	$0.85
borrow	cy	1,500	2.63	2.40
Pavement, PC conc, 10"	sy	9,068	6.95	6.95
fabric	sy	9,068	0.86	0.83
Sub-base, granular Tp A	t	3,940	4.75	4.79
Curb, concrete Tp 4	lf	4,300	3.00	4.38
Pavement, remove	sy	25	2.25	1.30
Curb, remove	lf	32	1.25	1.10
Sewers, storm, tp 1, 12"	lf	252	5.39	5.41
Backfill, trench	cy	18	7.00	5.66
Culverts, tp 2 72" pipe	lf	384	60.95	51.50
headwall, conc	ea	2	105.00	258.00
CB, spec with frm & closed lid	ea	7	315.00	310.00
MH, tp A, with tp 1 frame & closed lid	ea	1	350.00	465.00
Manholes, to be adjusted	ea	1	75.00	125.00
Inlets, to be adjusted	ea	1	82.50	131.00
Flap gate, 12", Mod 100, Armco or equal	ea	2	120.00	150.00
Barricades	ea	1	225.00	100.00
Tree, remove 6"-15"ϕ	inϕ	40	5.25	2.50
over 15"ϕ	inϕ	71	6.00	3.50

Completion schedule: 150 calendar days



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Construction costs are lower, too, with Ruberoid Corrugated Asbestos. Light weight makes possible skeleton frame construction requiring less costly footings. Corrugated Asbestos withstands severe climate changes, assures long, economical life under all weather conditions. Long life and reduced maintenance – plus dividends for the life of the building.

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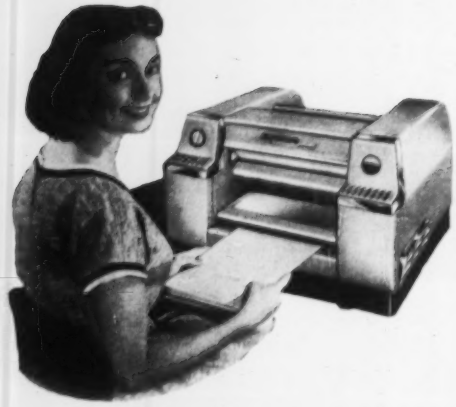

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Now is the time to take a good look at your older reproduction equipment. If it's more than a few years old, chances are it's costing you unnecessary time and money. It may well turn out to be a bottleneck in your efforts to meet growing production boom demands.

Compare your equipment with the new, modern Bruning machines shown here. You should be getting the time and manpower savings offered by greater mechanical speeds, faster return of originals, automatic separation, front or rear delivery! You should be benefiting by problem-free installation and operation—no exhaust venting, no plumbing or auxiliary equipment, no installation other than an electrical connection.

If you're not getting these important advantages, then every day you delay getting new, modern Copyflex is costing you time and money. Act now by mailing the coupon below. You'll be glad you did!

Leading contractors say... K-45 KOMPACTOR most *profitable* to own

From all over the nation come new contractor reports that Buffalo-Springfield's K-45 Kompactor is *regularly* saving 50% or more over normal compaction time and costs. These records show that regardless of widely varied materials—K-45 compaction is faster, better and more efficient than was previously thought possible.

Such outstanding results come from the Kompactor's "Interrupted Pressure" principle of compaction . . . its fast speeds of 5 to 6 mph, self-propelled, in either direction . . . its high maneuverability . . . and its ability to work right up close to curbs, culverts and abutments to eliminate costly hand-tamping. These are a few of the K-45's superior performance features that *give* more to *get* more than with any other method.

Before you bid another compaction job, check on the K-45 with your nearest Buffalo-Springfield distributor. Let him show you how the K-45 does more work per day per dollar, brings you more profit. Ask him, too, for Bulletin S-67-455, or write today for complete information on this better, exclusive compaction machine. There's nothing else like it available.

Here, the K-45 Kompactor works up close—eliminates hand tamping on this California job.

The K-45 Kompactor meets density specifications in fewer passes, faster, and at less cost.

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Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Iron and Steel Products: Last, June 13; Next, July 11
- Wood Products, Glass, Explosives, Chemicals: June 20; Next, July 18
- Clay Products, Lime, Plaster, Paint, Roofing: Last, June 27; Next, July 25
- Wage Rates, Building Board, Lath, Insulation: Last, June 27; Next, Aug. 1

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	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	
Atlanta	$4.31a	$3.90a	$3.57	$2.18	$2.28	$2.50‡	$2.18	$2.33	$1.55	$1.65	$0.175	$	$13.75g
Baltimore	4.42c	4.01c	3.49c	2.80‡a	2.80‡a	2.25‡a	2.85‡a	2.90‡a	2.05‡a	2.00‡a	18	18a	12.95
Birmingham	4.08	3.15af	....	2.53a	2.53a	2.13a	2.75	2.75	1.55	1.65	18	18	12.55
Boston	5.75be	4.67a	4.79e	3.00a	3.00a	3.00a	1.75a	1.85a	....	....	23	275a	15.00h
Chicago	4.13a	3.72a	3.78	3.78‡b	3.78‡b	4.13‡b	3.95‡b	3.95‡b	2.25‡	2.25‡	25	25b	13.50
Cincinnati	4.46c	4.05c	4.03	2.29‡c	2.34‡c	2.34‡c	2.64‡c	2.64‡c	1.89	1.89	.19	.24a	13.25
Cleveland	N.A. in C.L.	3.74	3.88a	2.15ef	1.95f	1.65	4.50‡a	4.50‡a	3.35‡a	3.35‡a	....	23	16.15
Dallas	3.55a	3.15a	3.43	2.60	2.65	1.90	2.43	2.63	....	....	....	27	11.25
Denver	4.69a	4.19a	4.69	1.90	2.05	1.20	....	....	....	....	22	245a	10.70
Detroit	4.10a	3.60ag	3.73	4.50‡b	4.50‡b	4.25‡b	3.75‡	3.75‡	3.80‡	3.80‡	23	24a	14.20
Kansas City	4.45i	3.96a	4.25	....	....	1.70‡a	2.00‡a	2.00‡a	....	....	21a	34c	13.80
Los Angeles	5.12ch	4.68ch	5.60	2.41‡a	2.76‡a	2.41‡a	2.41‡a	2.46‡a	....	....	14fw	24m	13.95h
Minneapolis	4.40a	4.00a	4.07	2.70‡ag	2.70‡ag	1.80‡ag	3.25‡ag	3.25‡ag	....	....	19	....	14.30f
Montreal	3.11d	2.86d	3.50	1.95‡a	2.20‡a	2.25‡a	1.95‡s	2.20‡s	2.00	2.00	20	20a	10.80ah
New Orleans	3.75a	3.45a	3.70	2.44	2.44	2.00	....	....	1.48	1.68	275	....	13.65
New York	4.79a	4.38a	3.88	3.05hk	3.05hk	2.30hk	2.90hl	2.90hl	....	....	25	30b	16.75an
Philadelphia	4.49/4.84‡a	4.09/4.46‡a	3.70/4.33‡	2.85‡ep	2.85‡ep	2.35‡ep	2.70‡	2.80‡	2.00	2.35	24/30	....	13.80ds
Pittsburgh	4.15a	3.75a	3.75	2.40‡	2.40‡	2.20‡	2.60‡	2.60‡	2.15	2.15	25d	31	14.00
St. Louis	4.01/4.33c	3.61/3.93c	3.86/4.18	3.25am	3.10am	2.40/3.10am	1.60j	1.70j	....	....	24	30c	12.41/12.90
San Francisco	3.94c	3.54c	4.38c	2.02	2.02	2.12	2.17	2.17	....	....	24	28d	12.75e
Seattle	4.30a	3.75a	4.45a	4.00‡bm	4.00‡bm	4.00‡bm	4.50‡bm	4.50‡bm	....	....	26	37c	13.30y
Toronto	4.03	4.03	4.03	2.40‡	2.40‡	2.05‡	2.20	2.20	2.20	2.20	35	275e	18.25

‡ Delivered. * Prices incl. dealers discount except as noted.

CEMENT: *a Less 10¢ disc, 15 days. *b Less 2% disc, 15 days. *c Less 10¢ disc, 10 days. *d Truckload lots, deliv. 10¢ disc, 20 days. *e Truckload lots *f Fob mill, add 13.80 to $20.30 per car switching charges *g fob mill + freight *h LCL. *i Less % disc, 10 days

SAND GRAVEL, STONE & SLAG: *a Truck lots. *b Per cu. yd. *c 5 tons or more. *d ½". *f Pea gravel. *g Less 5% for cash. *h Less than 5 tons. *i Plus 5% mun. & prov. tax *j F.o.b. quarry. *k Barge lots asd. *l F.o.b. scow Hudson river. *m Less 2% for cash. *n F.o.b. cars. *o 1-3 mi zone. *p Add 10¢ for ea. add'l mi zone.

CONCRETE BLOCK: *a Cinder *b Waylite. *c Haydite. *d Celocrete *e 8¼ x 8 x 12 in. *f 8 x 4 x 16. *g F.o.b. truck at job. *i Less 2% for cash *j F.o.b. plant San Rafael. *m F.o.b. yard.

READY MIXED CONCRETE: *a 5 cu. yds. or over del. Man. *b 25 cu. yds or more *c 10-100 cy. brackets. *d 1-3 mi. zone. *g 2,000 lb comp. *j 2,500 lb. comp. *g Less 25¢ disc, 15 days. *h Less 50¢ for cash. *i 8% off for cash. *j 2% off for cash. *k Federal tax included. Add 5% mun. & prov. *l 1-2½-3½. *m F.o.b. yard *n Plus escalator clause. *o Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payman within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 40¢ per bbl., not refundable.

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn	$3.30†	Buffington, Ind	$3.25†	Steelton, Minn	$3.45†	Muskegon, Mich	$3.30†	Toledo, O	$3.30†
Clinchfield, Ga	3.30†	Independence, Kan	3.10†	Leeds, Ala	3.15†	Saginaw, Mich	3.30†	Milwaukee, Wis	3.35†
Kingsport, Tenn	3.30†	Hannibal, Mo	3.35†	Duluth, Minn	3.45†	Wyandotte, Mich	3.30†	Green Bay, Wis	3.35†
West Des Moines, Iowa	3.35†	Northampton, Pa	3.35†	Hudson, N. Y	3.35†	Buffalo, N. Y	3.40†	Ironton, O	3.30†
Nazareth, Pa	3.35†	Universal, Pa	3.45†	Alpena, Mich	3.20†	Oswego, N. Y	3.45†	Montreal City	3.56†
Bath, Pa	3.35†	Waco, Tex. (+ 10¢ tax)	3.35†	Detroit, Mich	3.30†	Cleveland, O	3.35†	W. Winfield, Pa	3.45†
Lesley, Pa	3.35†	Giant, S. C	3.35†	Howes Cave, N. Y	3.35†	Alsen, N. Y	3.35†	Security, Md	3.35†

† *Prices to hold for third quarter of 1957.*

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80-300 penetration		CUTBACK ASPHALT MC per ton		ROAD OIL Per gal.	ASPHALT EMULSION RSI Per gal.	
	Granite Per M lots of 80,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 18-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta	.....	.....	.....	$30.50	$45.00	$0.15	$0.26	$0.125Pw	$0.28Pw	$0.14	$0.125	$0.30
Baltimore	180.00‡	.....	.....	23.00s	.....	.095s	0.185s	10swE	19swE	10s	105s	0.195s
Birmingham	.....	82.00s	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	24.00ap	46.00ap	24.00as	46.00as	11aPw	24apPw	.11ao	.174aGo	35aGo
Chicago	180.00‡	90.00‡b	3.95/4.00‡j	24.25b	34.25b	21.40bs	31.40bs	11bsH	19bsH	085b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	.....	82.00d	6.30g	25.00A	.....	25.00A	.....	1115AswF	.....	.....	1115AG	21AG
Dallas	s	40.00	s	26.35	45.39	.1115	.1944	29.80	51.40	.1080	.1118	.1994
Denver	.....	56.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	112.00	.....	29.65	.....	29.65s	.....	1285swI	.....	.1026	.....	38
Kansas City	s	s	s	21.00el	.....	21.00s	.....	0975swJ	.....	095c	0.125e	.....
Los Angeles	s	.....	s	21.00dms	.....	21.00dss	.....	22.50dsK	.....	21.50ds	.09j	.19j
Minneapolis	.....	.....	3.73h	29.50	.....	29.50	.....	0.125w	.....	0.118	.134	.....
Montreal	s	s	s	32.50m	44.80m	.176m	.226m	18.70swE	23.70swE	.154m	.342ms	27ms
New Orleans	.....	.....	.....	20.00e	.....	20.00es	.....	095ws	.....	085B	095BL	.....
New York	.....	.....	3.70f	26.80qCD	47.32qD	26.80sCD	47.32sD	1273swCDF	2139swDF	.....	1273CD	2168D
Philadelphia	178/188	110/130	4.06	22.00	.....	22.00	.....	095swF	.....	095	.....	.....
Pittsburgh	168.00	48.00	4.60	27.00	38.00	10	.21	27.00E	40.00E	098	.11	224
St. Louis	.....	.....	.....	22.90f	.....	.1825	.....	1035fgM	.....	0.165	.1825f	.....
San Francisco	.....	70.00e	.....	23.00gk	40.00g	23.00gks	40.00gks	24.00gN	41.50gN	23.75eg	10g	19g
Seattle	.....	.....	.....	27.00z	40.50h	27.00z	.....	28.50K	.....	24.75hv	10h	11hr
Toronto	.....	123.00	4.50	40.10	59.38	0.2804	0.2445	0.214w	0.258w	0.198	0.216	.271

‡ Delivered.

PAVING BRICK & BLOCK: *b 3 x 4 x 8. *c 2¼ x 8½ x 4. *d LCL, truck deliveries. *e Not used. *f 2" interior 6# treat. *g 3" *h 2" tr, 8# *i 3 x 3½ x 8½. *j 2½", 6 lb. tr.

ASPHALTS: *a Price at plant, Everett, Mass. *b F.o.b. refinery, Lockport, Ill. *c F.o.b. Sugar Creek, Mo. *d F.o.b. refinery, El Segunda. *e F.o.b. Baton Rouge. *f F.o.b. Wood River, Ill. *g F.o.b. Richmond, Calif. *h F.o.b. Martinez. *i F.o.b. refinery, Baltimore. *j F.o.b. refinery, Inglewood, Calif. *k 50-110 penetr. *l Less than 100 penetr. *m 40/80 penetr. *n Fed. tax included; add 5% for mun. & prov. *o Drums not avail. Shipped in steel bbl. *p 60/70 penetr. *q 40/85 penetr. *r In customer's drums. *s Shipped in drums, per drum. *t 85/200 penetr. *u Per 100 gal. *v Per ton. *w Per gal. *z Also tank trucks. *y F.o.b. Oakland *z F.o.b. Edmonds. *A F.o.b. refinery, Cleveland. *B F.o.b. Destrehan, La. *C Bulk. *D Prices based on transporting to Manhattan via truck. *E RC. *F Also RC. *G Also MS, SS. *H RC 0-8 incl. *I MC 4. *J MC, RC $0.0875. *K MC 3, 4 & 5. *L MS. *M MC 1-6, RC 1-6, $0.106. *N MC 3. *O Truckload *P F.o.b. refinery Savannah; $0.09/gal., tank cars; $0.20 gal., drums. Correction.

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, S. N. NOLAN, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—LB & CA

▲ **R. Zoppo Co., Inc.**, 842 Providence Hy., Norwood, Mass. CA $1,280,655. 36-in. water pipe line from White Bridge Pumping Station, Bristol to Wooster St., New Britain; NEW BRITAIN, CONN. City, City Hall New Britain Conn. Bids June 3. CD 6/10, under LB.

BUILDINGS—LB & CA

▲ **Turner Constr. Co.**, 150 E. 42nd St., New York, N. Y., CA Approx. $4,000,000, 132,000 sq. ft. masonry ELECTRONICS LABORATORY, junction Rts. 3 and 128, BURLINGTON, MASS., RCA Defense Electronics Div., Theodore B. Smith, exc. vice pres., Cooper and Front Sts., Camden, N. J. Malcolm B. Wells, Cuthbert Rd., Merchantsville, N. J.; engr.

▲ **Southern New England Contg. Co., Inc.**, 66 Sanford St., Hartford, Conn. LB $1,209,000. (3 bidders) HOSPITAL ADDN., HARTFORD, CONN. Mount Sinai Hospital, 500 Blue Hills Ave., Hartford, Conn. Bids June 18. CD 5/22.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **NEW JERSEY**—BA 7/9—New Jersey Turnpike Auth., 65 Prospect St., Trenton,
Hudson Co.—grading, drainage, paving, lighting and incidental work for the constr. of Service Area EN and S, Bay-Hudson County Extension of the New Jersey Turnpike, Howard, Needles, Tammen & Bergendoff, 99 Church St., New York 7, N. Y., consult. engrs., CD 8/20/53.

HEAVY CONSTRUCTION—LB & CA

▲ **Slattery Contg. Co. and Tully & DiNapoli, Inc.**, 46-36 54 Rd., Maspeth 18, N. Y., LB $4,417,807 (2 bidders) platform exten. to Times Square, 72 and 96 Sts. Station and enclosures for Broadway-7th Ave. Line, Manhattan Boro, Contr. C-120, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids June 14. CD 6/10.

▲ **James McHugh Constr. Co.**, 6449 S. Park Ave., Chicago, Ill., CA $2,210,000. sewage treatment plant, secondary treatment plant Unit 23, WASH., D. C. D. C. Govt. Dpt. Sanitary Eng., 499 Pa. Ave. N. W. Wash., D. C. Bids May 22. CD 5/24, under LB.

BUILDINGS—LB & CA

▲ **Morreale Brothers Inc.**, Bridge Plaza, Fort Lee, N. J., CA $1,500,000. third section, 34 HOUSES on tract at Mayer Dr. near Rte. 202, SUFFERN, N. Y. Ramapo Hills Homes, c/o contractor.

▲ **John K. Ruff, Inc.**, 3010 Ridgewood Ave., Baltimore, Md., CA $1,288,781 (9 bidders) Elkton HIGH SCHOOL, ELKTON, MD. Bd. Educ., Elkton, Md. Bids May 28, awarded June 19. CD 5/31.

▲ **Rupert Constr. Co.**, 3400 Lancaster Ave., Wilmington, Del., LB $2,676,300. Brandywine High SCHOOL near here, WILMINGTON, DEL. Alfred I. Dupont School Dist., 3606 Concord Pike, Wilmington, Del. Bids June 18. CD 6/12.

SOUTH

HEAVY CONSTRUCTION—BA

▲† **Fla., Cocoa**—HOUSING—BA On Or About 9/3—Contr. Officer, Air Force Missile Test Center, Air Research and Development Command, Patrick Air Force Base, 999 family housing units, Patrick Air Force Base, 08-606-58-1. Plans deposit $200. CD 5/24/49.

HEAVY CONSTRUCTION—LB & CA

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comm., Raleigh,
N. C.—**Asheville Contr. Co.**, Box 5119 Biltmore Sta., Asheville, N. C., CA $531,945, est. $400,000-$500,000, CABC, base surf. treat. 9.5 mi. US 129 from point in Robbinsville, east to point approx. 2.5 mi. north of Topton and US 19. Proj. 9301 S-346 (5) F. H. 7-A, Graham Co.;
N. C.—**Clement Bros. Co., Inc.**, Lenoir, N. C., CA $538,640, est. $400,000-$500,000, SABC and b. conc. binder and surf. 8.64 mi. on N. C. 16 from Catawba River southeast to point in Charlotte Proj. 6563, F-444 (10), Mecklenburg Co.;
N. C.—**Southern Roadbuilders Inc.**, 540 Reynolds St., Augusta, Ga., CA $2,516,115, est. over $1,000,000, sub-grade rein.-concrete pavt. and SABC and BST. 11.47 mi. on relocation of US 29, Charlotte By-Pass, Proj. 6524 1-647 (4) U-647 (5), Mecklenburg Co. Grand total $3,586,700. Bids May 28, awarded June 17. CD 6/10, under LB.

BUILDINGS—LB & CA

▲† **Paul Tishman, Inc.**, 21 E. 70 St., New York 2, N. Y., CA $14,318,808; 800-1, 500 bed NAVAL HOSPITAL, NOY 89463, Spec. 47332, PORTSMOUTH, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va., bids May 14. CD 5/16 under LB.

▲ **Drexel Hills Land Co.**, 101-34th St., Ensley, Birmingham, Ala., Owner Builds. $3,000,000. 250 brick, brick veneer air-conditioned HOMES, Bluff Park Area, HOMEWOOD, ALA.

▲ **Southern Builders, Inc.**, 495 W. 61 St., Shreveport, La., CA $1,265,000, JUNIOR HIGH SCHOOL, Hearne Ave. at Logan St., SHREVEPORT, LA. Caddo Parish School Bd., Shreveport, La. Bids June 4, CD 6/7, under LB.

▲ **W. C. Salley, Contractor**, P. O. Box 24, Monroe, La., CA Est. $1,000,000, general contract 1 story, brick, porcelain, enamel, etc. OFFICE BLDG., WEST MONROE, LA. Louisiana Power & Light Corp., West Monroe, La. Bids May 20.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ **INDIANA**—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis, Bids opened 6/11,
Ind.—**Muncie Paving Co.**, Cornbread Rd., Muncie, Ind., LB $205,947, Est. $249,820 (7 bidders), bit. base widening and resurf. 6.67 mi. on S.R. 135 from Marion and Washington Streets in Morgantown to Trafalgar. Contr. No. RS-4112 S-300 (2), Morgan and Johnson Counties.
Ind.—**Bontrager Constr. Co.**, Elkhart, Ind., LB $179,486 (2 bidders), paving, grading, draining 0.688 mi. Road No. 67 from 0.1 mi. southwest of S.R. 3 to 26th Street at Muncie (bridge extension), Contr. No. R-4114 F-72 (12), Delaware Co.
Ind.—**Spears-Dehner Inc.**, 1212 Clark, Ft. Wayne, Ind., LB $520,947 (2 bidders), bit. pavt. with waterbound mac. base 4.791 mi. Road No. 27 from 1.5 mi. south of Fountain City to just south of Wayne-Randolph County line Contr. No. R-4116 F-402 (10), Wayne Co.
Ind.—**Reith-Riley Constr. Co.**, Goshen, Ind., LB $168,103, Est. $170,548 (1 bidder), bit. pavt. with concrete base and bit. widening and bit. resurf. 1.033 mi. Road No. 30 from 0.5 mi. west to 0.5 mi. east to Atwood, Contr. No. R-4117 F-66 (2) Part B, Kosciusko Co.; LB $1,089,892, Est. $1,251,586 (7 bidders) bit. binder on compacted aggreg. base 4.069 mi. Road No. 50 from 2.4 mi. northeast of Dillsboro to 1.3 mi. southwest of Aurora, Contr. No. R-4163 F-153 (2), Dearborn Co.
Ind.—**Ralph Rogers & Co.**, S. Adams, Bloomington, Ind., LB $114,120 (1 bidder), bit. coated aggreg. surf. on waterbound mac. base 1.577 mi. Road No. 135 from 1.275 mi. south to 0.38 mi. north of County line at the Muscatatuck River, Contr. No. R-4162 S-110 (4), Washington and Jackson Counties.
Ind.—**Brooks Constr. Co.**, 1123 Barthold, Ft. Wayne, Ind., LB $107,868, Est. $130,201 (5 bidders), bit. pavt. on compacted aggreg. base and base widening 3.3 mi. on County Road from US 27 just south of Hessen Castle to Wayne Trace. Contr. No. R-4165 S-421 (1), Allen Co. CD 5/23.

BUILDINGS—LB & CA

▲ **Dahl Stedman Co.**, 7 So. Dearborn St., Chicago, Ill., CA $2,410,347, 3 story, bsmnt. HOSPITAL addn., 155th and Page Ave., HARVEY, ILL. Ingalls Memorial Hospital, 155th St., Harvey, Ill. Wm. W. Benn & Assocs., 7 S. Dearborn St., Chicago, Ill., archts. CD 4/9.

▲ **Spence Bros.**, 417 McCoskry St., Saginaw, Mich., CA $1,146,000, general contract HIGH SCHOOL, MICHIGAN CENTER, MICH. Bd. Educ., Michigan Center School Dist., Homer Cusick, secy., 137 Board St., Michigan Center, Mich. Bids May 9. CD 6/7, under LB.

▲ **Gordon Williamson Co.**, 19180 Grand River, Detroit, Mich. Owner Builds. $2,100,000. 90 brick ranch HOMES, Lake Angelus Estates, WATERFORD, MICH.

▲ **Kroening Eng. Corp.**, 4500 W. Mitchell St., Milwaukee 14, Wis., CA Est. $5,000,000, 300,000 sq. ft., 2nd unit of Mayfair SHOPPING CENTER, WAUWATOSA, WIS. Froedert Enterprises, 735 N. Water St., Milwaukee 2, Wis. Bids June 4. CD 5/20.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—LB & CA

▲ **TEXAS**—State Hy. Comm., Austin, Bids opened 6/19.
Tex.—**Allen Keller Co.**, Box 393, Fredericksburg, Tex. LB $119,897. widen and surf. shoulders and b. conc. 8.562 mi. Hy. US 87, Proj. C 71-6-23, Gillespie Co.; LB $576,172, flex. base, b. conc. pavt. and two courses surf. treat. 11.879 mi. Hy. US 183, Proj. F 233 (4), Burnet Co.
Tex.—**Killian-House Co.**, 4600 Broadway, San Antonio, Tex. LB $2,527,558. grades, structures, flex. base and hot mix b. conc. 4.262 mi. Hy. Loop 13, Proj. I 1075 (1) Bexar Co.
Tex.—**Kerr & Middleton**, Box 5065, Lubbock, Tex. LB $209,404. grading, structures, base and surf. 17.793 mi. Hy. FM 168, 1075, 1731 and 2013, Proj. R 874-5-4, R 1256-2-2, R 1634-21-1 & R 2185-1-1, Castor and Parmer Counties.
Tex.—**Perry Const. Co. & J. W. Perry**, 501 Insurance Bldg., San Antonio, Tex. LB $104,921. grading, structures, base and surf. 4.096 mi. Hy. FM 2434, Proj. S 2173 (1), Colorado Co.
Tex.—**W. E. Brittain Inc.**, Box 7311, Ft. Worth, Tex. LB $457,019. grading, structures, base and surf. 9.579 mi. Hy. FM 1900, Proj. R 2367-1-1, Jefferson Co.
Tex.—**J. M. Dellinger, Inc.**, Box 4227, Corpus Christi, Tex. LB $169,752. grading, structures, base and surf. 9.646 mi. Hy. FM 2287, Proj. S 2190 (1), Jim Wells and Live Oak Counties.
Tex.—**J. R. Fanning**, Box 1278, Lubbock, Tex. LB $156,019. grading, structures, base and surf. 8.246 mi. Hy. FM 2389, Proj. S. 2189 (1), Ochiltree Co.
Tex.—**John F. Buckner & Sons**, Box 76, Cleburne, Tex. LB $91,186. grading, structurees, base and surf. 5.139 mi. Hy. FM 1810, Proj. R 2214-1-1, Wise Co. CD 5/27.

▲ **TEXAS**—State Hy. Comm., Austin, Bids opened 6/18,
Tex.—**Heldenfels Bros.**, Box 1917, Corpus Christi, Tex. LB $304,087. 9.186 mi. grading, structures, base and two course surf. treat. Hy. SH 173, Proj. S 71 (2), Atascosa Co.; LB $159,305, 0.782 mi. grading, structures, slope protection and surf. on Hy. FM 534, Proj. C 1808-1-2, Live Oak Co.
Tex.—**E. W. Hable & Sons**, Drawer 650, Corsicana, Tex. LB $181,035. grading, structures, base and surf. 3.68 mi. Hy. FM 1293, Proj. R 1947-1-3, Hardin Co.
Tex.—**Reynolds & Huft**, Box 88, Tyler, Tex. $113,829. grading, structures, base and surf. 5.116 mi. Hy. FM 555, Proj. R 1018-2-4, Upshur Co.
Tex.—**G. C. McBride Co.**, Box 500, Brownwood, Tex. LB $129,925. b. conc. pavt. 15.06 mi. Hy. US 190, Proj. C 272-6-7, Lampasas Co.
Tex.—**Menefee Bros.**, Box 431, Center, Tex. LB $77,711. grading, structures, base and surf. 4.648 mi. Hy. FM 1196 and 1277, Proj. S 2183 (1) & S 2182 (1), San Augustine Co.
Tex.—**H. V. Caver, Atlanta, Tex.**, LB $114,366, grading, widen structures, flex. base and one course surf. treat. 5.429 mi. Hy. US 59 Proj. C. 62-5-24, Marion Co.
Tex.—**Austin Contracting Co.**, Box 1590, Dallas, Tex., $190,844 grading, structures, base and surf. 7.82 mi. Hy. FM 2352 Proj. R 2194-1-1, Lamar Co.

(Continued on page 66)

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England — **Middle West**
Middle Atlantic — **West of Mississippi**
South — **Far West**

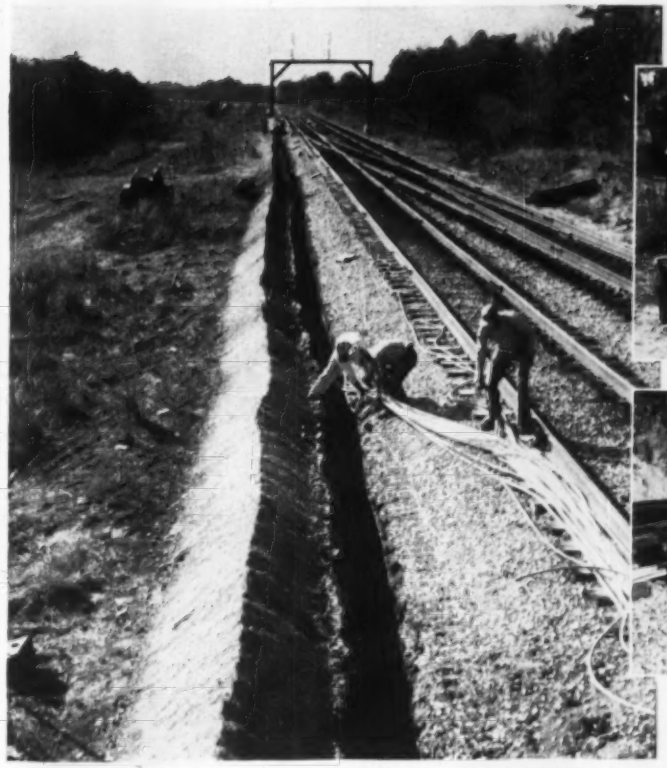
PROPOSED WORK
Water Supply — **Public Buildings**
Sewers, Waste Disposal — **Mass Housing**
Bridges — **Commercial Buildings**
Streets & Roads — **Industrial Buildings**
Earthwork, Waterways — **Unclassified**

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily Issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily
For additional reports see Construction Daily.



Southern Railway installs underground code cable between Atlanta, Ga. and Greenville, S. C.

Uses 2 Clevelands to dig 152-mile trench 30" deep

The Southern Railway recently completed an installation of underground code cable in trench dug along its track between Atlanta, Ga. and Greenville, S. C. for its new centralized traffic control system. The long-distance trench was dug by two Cleveland Model 92 trenchers to a width of 12 inches and a minimum of 30 inches in depth. Code cable was fed into the trench immediately behind the trencher's digging wheels.

Trench production was outstanding, according to the project supervisors—in ground full of boulders, rocks and cinders, in soils ranging from hard clay to sand, soft dirt and mud. (In winter, the Clevelands worked in slush so deep in places it was up to a man's hips.) In good weather the job moved ahead swiftly, as much as 6300 feet in a single day, trench excavated and cable installed. Overall production for the entire job averaged a quarter mile per day.

"We're well pleased with our Clevelands" said R. T. Sewell, Signal and Electrical Supervisor. "We see now what contractors–whom we consulted about trenchers–meant when they said that if we got Clevelands we'd be getting the best."

The Cleveland 92's picked up boulders and other obstructions which the supervisors had thought pick and shovel crews would have to dig out. "If our Clevelands couldn't pick up an obstruction we'd call for the rock drill or we'd blast. We really began to dig when we got the Clevelands," says C. A. Woodyard, Signal Foreman on the job.

In spite of the rugged digging, not once during the 152-mile project was there a mechanical breakdown. Only minor parts replacements had to be made on the Clevelands, some due to continual digging on a slope, some due to normal wear.

Write for complete detailed report on this project

Good Everywhere

THE CLEVELAND TRENCHER COMPANY

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(Continued from page 64)

Tex.—**Austin Bridge Co. and Ivan Dement**, P. O. Box 1596, Dallas, Tex., LB $1,124,413, grading, structures storm sewers, flex. base, concrete pavt., b. conc. pavt. and two course surf. treat. 7.936 mi. Hy. St. 70 and 152 FM 750 Proj. F. 720 (10), FG. 720 (11) C 309 1 16, S. 2184 (1) and S. 2180 (1), Gray Co.

Tex.—**Strain Bros., Inc.**, Box 1631, San Angelo, Tex., LB $105,910, grading, structures, base and surf. 12.878 mi. Hy RM 2400 Proj. S. 2186 (1), Pecos and Terrell Counties.

Tex.—**Callan Constr. Co. & R. T. Farr**, Box 3146, Waco, Tex., LB $289,069, grading and structures 13.588 mi. Hy. FM 765 Proj. S. 2028 (1), McCulloch Co.

Tex.—**Worth Constr. Co.**, Box 531, Fort Worth, Tex., LB $2,107,318, grading, structures base, concrete pavt. and b. conc. pavt. 8.133 mi. Hy. US 81 Proj. I. 139 (11), McLennan Co.

Tex.—**Cooper & Woodruff, Inc.**, 204 May's Bldg., Amarillo, Tex., LB $203,983, grading, structures, base and surf. 15.876 mi. Hy. FM 168 and 1714 Proj. S. 1560 (2), Randall Co.

Tex.—**J. W. Perry**, 501 Insurance Bldg., San Antonio, Tex., LB $82,296, grading, structures, base and surf. 4.144 mi. Hy. FM 2455 S. 2167 (1), Camp and Upshur Counties. CD 5/27.

▲† **R. F. Ball Constr. Co., Inc.**, Box 2300, San Antonio 6, Tex., LB $1,317,023, (Sched. 1) Air National Guard Facilities, hangar and support items Phase II, ENG-41-243-57-46, KELLY AIR FORCE BASE, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids June 13. CD 5/7.

FAR WEST

BUILDINGS—BA

▲ **Calif., San Francisco**—OFFICE—BA 7/23—State Div. Architecture, P. Wks. Bldg., Sacramento, 7 story, 400,000 sq. ft., rein.-con. state office bldg., vicinity Golden Gate and Polk Sts., $6,000,000. CD 6/1/55.

HEAVY CONSTRUCTION—LB & CA

▲† **Wismer, Becker & Lord**, 1731 "S" St., Sacramento, Calif., LB $1,802,368 est. $1,582,482 Green Springs power plant, switchyard and penstock, Rouge River Basin Proj. Spec. DC 4905, OREGON. Bureau Reclamation, Dpt. Interior, Bldg. 234, Camp White, Ore. Bids June 18. CD 5/7.

Papac Constr. Co., 604 N. Montebello Blvd., Montebello, Calif., LB $948,612. (4 bidders) Line C and Part Line A, Storm Drain Bond Issue Proj. No. 65, Unit 2, Dorchester Ave. Storm Drain, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif., Bids June 14, CD 11/7/52.

BUILDINGS—LB & CA

▲ **McNeil Constr. Co.**, 5858 Wilshire Blvd., Los Angeles, Calif., CA $5,000,000. 13 story, 233,000 sq. ft. steel frame, rein.-con. slab floors OFFICE BLDG., LOS ANGELES, CALIF. International Business Machines Corp., 1670 Wilshire Blvd., Los Angeles 17, Calif. CD 2/6/56.

CANADA

HEAVY CONSTRUCTION—LB & CA

▲ **ALBERTA**—Alta. Govt., Parliament Bldgs., Edmonton, Alta.—**Mannix-O'Sullivan Paving Co. Ltd.**, 332-7th Ave. S.W., Calgary, Alta., CA $963,089 (3 bidders), stab. grav. base course 12 mi. on Hy. No. 28 from Redwater to Radway and about 10 mi. from St. Brides to St. Paul.

Alta.—**Gallelli & Sons Co. Ltd.**, 703-48th Ave. N.E., Calgary, Alta., CA $304,464 (4 bidders), asphaltic plant mix surf. course about 18"mi. on Hy. No. 9 from Richdale to Youngstown.

Alta.—**Standard Gravel & Surfacing of Canada Ltd.**, 5340 1st St. S.W., Calgary, Alta., CA $497,573 (3 bidders), stab. grav. base course about 9 mi. on Hy. No. 2 from Aldersyde to High River.

Alta.—**Thode Construction Ltd.**, Edmonton, Alta., CA $297,623 (4 bidders), asphaltic plant mix surf. about 16 mi. on Hy. No. 12 from Stettler to Gadsby.

Alta.—**Floyd Barber Ltd.**, Medicine Hat, Alta., CA $471,018 (5 bidders), asphaltic plant mix surf. course about 31 mi. on Hy. No. 14 east of Ryley to east of Viking.

Alta.—**George Ludwig Ltd.**, 2007-36th St. S.W., Calgary, Alta., CA $148,891 (11 bidders), grading and other work on Hy. No. 43-48 from jct. of Hy. 14 to Edgerton. Grand Total $2,682,658. CA June 12. CD 12/1/43.

▲ **Jamieson Constr. Co. Ltd.**, 914 E. Hastings St., Vancouver, B. C., LB $1,373,582 (2 bidders) earth dams, compensation culvert and tunnel intake of Ash River hydro-electric power development near Port Alberni, BRITISH COLUMBIA. B. C. Power Commission, P. O. Box 500, Victoria, B. C.

▲ **McNamara Constr. Co. Ltd.**, 42 Industrial St., Toronto, Ont. and **Brown & Root Ltd.**, 7810 104 St., Edmonton, Alta., CA $15,316,125, general contracting work for Kelsey Generating Station at Grand Rapids on Nelson River Mystery Lake, Moak Lake Area, MANITOBA. Manitoba Hydro-Electric Power Comm., Electric Railway Chambers, Winnipeg, Man. Bids May 23, awarded June 6. CD 5/15.

▲ **E. G. M. Cape & Co.**, 4898 Western Ave., Montreal, Que., LB $1,450,999 (2 bidders) reconditioning and widn. of Berth 18, Quebec Harbor, QUEBEC CITY, QUE. National Harbors Bd., West Block, Parliament Bldgs., Ottawa, Ont. Bids June 14.

BUILDINGS—LB & CA

▲ **T. A. Andre & Sons Ltd.**, 580 Brock St., Kingston, Ont., CA About $1,000,000. 4 story 50x240 ft., concrete frame, stone, MEN'S RESIDENCE, KINGSTON, ONT. Queen's University, Kingston, Ont. Bids May 31, awarded June 13. CD 5/8.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲† **Franz Katlein**, Vienna, Austria, CA $1,160,000. EMBASSY STAFF HOUSING, VIENNA, AUSTRIA. Dpt. of State, Foreign Bldg. Operations, 21 St. and Virginia Ave. N. W., Wash. 25, D. C. U. S. A. CD 2/13/56.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Mont., Helena**—City, City Hall, $2,100,000 bond election July 23, incl. 12 mil. gal. pipeline from Helena Valley Proj. 6 mil. gal. filtration, treating and pumping plant and lines to East Side Reservoir. $1,604,000. CD 7/28/49.

▲ **Tex., Wichita Falls**—Wichita County Water Dist. No. 1, water supply reservoir—dam, (for domestic and industrial purposes) $10,000,000; water main—reservoir to city, $1,500,000; water pumping plant $1,500,000.

▲ **Wis., Sheboygan**—City, City Hall, plans by J. Donohue Eng. Co., 606 N. 8 St., waterworks expansion, $1,284,000, Alvord Burdick & Howson, 20 N. Wacker St., Chicago, Ill., consult. engrs.

▲ **Que., Jonquiere**—Cite de Jonquiere, City Hall, filtration plant, $1,000,000. Lalonde & Valois, Canada Cement Bldg., Montreal, consult. engrs.

SEWERS, WASTE DISPOSAL

▲ **Conn., New Haven**—City, City Hall, reconstr. sewage system in downtown area, part of Church St. Redevelopment Proj., $1,400,000. William Bolton, city engr.

▲ **N. Y., Brooklyn**—Pres. Brooklyn Boro, Boro Hall, Brooklyn,
relief sewers in Ave. K and Ave. L, East 13 St., etc. $10,200,000;
sewers in Bragg St., Sheepshead Bay to Ave. Y, etc. $463,000;
relief sewer in Knickerbocker Ave. (first section) $4,000,000;
relief sewer in Knickerbocker Ave. (second section) $3,000,000;
sewers in Sterling Pl. 6 Ave. to 7 Ave., etc. $232,000;
relief sewer in Wallabout St. from Broadway to Kent Ave., etc. $1,152,000. To go ahead after 1960.

▲ **N. Y., New York**—Pres. Bronx Boro, 851 Grand Concourse, New York, Zone 51,
PX-82, combined relief sewers on Truxton Ave., $1,000,000;
PX 44 and 61, storm overflow and combined relief sewers, Ramlins Ave., Slodium Ave., $2,000,000;
PX-49, combined relief sewer on Morris Park Ave. $2,000,000;
PX-59, combined relief sewer on Mace and Bartow Ave., $2,200,000; CD 8/23/45.
sewers in Duncan St. from Laconia Ave. to Radcliff Ave., etc., $237,500.
interceptor sewer from Hollers Ave. to Pelham Bay Park West, etc., $205,000;
PX-80, storm overflow and combined relief sewer on Metcalf Ave., $3,000,000;
PX-48B, sewer on Park Ave. (Webster Ave. Relief Sewer) $1,200,000;
PX-76, overflow and combined relief sewer on Pugsley Ave., $1,500,000;
Sewers in Seward Ave., from Pugsley Ave. to Leland Ave., $140,000;
PX-45, storm sewer on E. 222 St., $200,000.

BRIDGES

▲ **Wash., Seattle**—City, County-City Bldg., Zone 4, traffic interchange at north end of Montlake bridge, with new approach road, $2,250,000, work expected to start this year. CD 2/7.

STREETS AND ROADS

▲ **CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,
East Windsor—bit. surf. tr. 3.1 mi. Route 140 from Route U. S. 5 to S. Main St. $80,000.
Litchfield and Thomaston—relocation of Route 8, for Thomaston Dam, $2,500,000. Andrews, Clark & Buckley, 305 E. 63 St., New York, N. Y. consult. engrs. Bids in 57.
Suffield—bit. surf. tr. 1.7 mi. Route 90 from Route 75 to U. S. 5A, $75,000.
Thomaston—temporary by-pass road on Route 8 around site of Thomaston Dam, $500,000.

▲ **Ill., Chicago**—City, City Hall, 5½ mi. paving Southwest Superhighway, $32,000,000, CD 2/18/45.

▲ **Ill., Chicago**—City, City Hall, 18 mi. South Route superhighway, Harrison St. to W. 119th and Ashland & 103rd and Doty, $160,000,000, CD 6/12/52.

AIRPORTS

▲ **Tex., Fort Worth**—HANGAR, etc.—J. D. Owens Co., Century Life Bldg., plans by Hedrick & Stanley, 1200 T&P Bldg., Fort Worth, archts., constr. structural steel, masonry hangar, shops and offices for Central Airlines at Amon Carter Field. Over $1,000,000.

PUBLIC BUILDINGS

▲ **Calif., Palmdale**—SCHOOL—Palmdale School Dist., plans by Balch Bryan Perkins & Hutchason, 2933 Rowena St., Los Angeles, archts., $2,000 sq. ft., rein. brick and precast concrete tilt-up panels, Juniper Elementary and intermediate school, $1,000,000. CD 2/1.

▲ **Calif., Redwood City**—SCHOOL—Sequoia Union High School Dist., Broadway and El Camino Real, plans by Janssen, Daseking & Keller, 1616 El Camino Real, Menlo Park, archts., high school, East Palo Alto, $2,000,000. CD 5/27/52.

▲ **Calif., Santa Ana**—SCHOOL—Santa Ana School Dist. 1415 French St., plans by Harold Gimeno, 1400 N. Sycamore St., Santa Ana, archt., Fairview High School, $1,566,364. CD 6/15/53.

▲ **Calif., Sunnyvale**—HOSPITAL—El Camino Hospital, Dist., Bd. Directors, 673 Carolina St., voted bonds June 11, hospital, $7,260,000; plans by Stone, Mulloy Marraccini & Patterson, 619 California St., San Francisco, Calif., archts. CD 5/1.

▲ **Conn., New Haven**—GARAGE—New Haven Parking Auth., City Hall., New Haven, parking garage, Temple St., part of Church St. Redevelopment Project, $5,000,000. William Bolton, city engr.

▲† **D. C., Wash.**—HOUSE OF REPRESENTATIVES—Architect of Capitol, U. S. Govt., U. S. Capitol, House of Reprenestatives Bldg., remodeling of old building and existing new building, $79,000,000 ($10,000,000 appropriated). CD 2/17/56.

▲ **Fla., Miami**—COUNTY JAIL, etc.—Dade Co. Bd. Comrs., Court House, plans by Coda Associates, 206 Roper Bldg., Miami, 10 story county jail and sheriffs bldg., vicinity of N. W. 12 Ave. and 17 St. $1,500,000.

▲ **Kan., Topeka**—SCIENCE HALL—Washburn University, Topeka, science hall, $1,000,000.

▲ **Mich., Birmingham**—SCHOOL—City, Bd. Educ., Chester St. voted bonds June 10, junior high school, elementary school, etc., $6,800,000. CD 5/23.

▲ **Mich., Center Line**—SCHOOLS—City, Bd. Educ., 26300 Arsenal St., voted bonds June 10, junior high and two elementary schools addns., $1,850,000. CD 4/22.

▲ **Mich., Dearborn**—SCHOOLS—Dearborn Twp., Bd. Educ., School Dist. No. 3, 24695 Ann Arbor Trail, Dearborn, voted bonds June 10, high school and elementary school, $2,300,000.

▲ **Mich., East Detroit**—SCHOOL—Bd. Educ., Charles A. Goetz supt. of Schools, 15500 E. 9 Mile Rd., defeated bonds June 10, school program, $3,500,000. CD 5/20.

▲ **Mich., Inkster**—SCHOOLS—Dearborn Twp., Bd. Educ., School Dist., No. 8, 25720 Penn Ave., Inkster, voted bonds, high school and elementary school, $6,500,000.

▲ **Mich., St. Joseph**—SCHOOLS—City, Bd. Educ., voted bonds May 27, high school and elementary schools, $3,500,000. CD 4/4.

▲ **Mich., Southfield**—SCHOOL—City, Mark W. Rebine, secy., Pub. School Dist., voted bonds June 10, school constr. program, $4,000,000. CD 6/3.

▲ **N. J., Kearny**—SCHOOL—Town, Town Hall, plans by Robert A. Fava, 30 James St., Newark, school between Wilson and Davis, $3,400,000. CD 8/6/56.

▲ **O., Brecksville**—HIGH SCHOOL—Bd. Educ., 8915 Highland Dr., bond election Nov. 5, high school, $1,250,000, Robert A. Little & Assoc., 1303 Prospect Ave., Cleveland, Zone 15, archts. CD 1/6/56.

▲ **O., Brewster**—SCHOOLS—Fairless Bd. of Educ., Brewster, bond election Nov. 5, new senior high school $1,000,000-$1,300,000.

▲ **O., Cleveland**—EXHIBITION AND CONVENTION HALL—City, City Hall, plans by Robert A. Little & Assoc., 1303 Prospect Ave., Cleveland 15, 2 story 280,000 sq. ft. of exhibition and convention hall to be built opposite public hall on E. 6th St., incl. 500 car parking space, $16,000,000.

▲ **O., Columbus**—PHYSICS ADDN.—Ohio State University, N. High St., Columbus, 4 story physics bldg. on campus, $1,400,000.

▲ **O., East Cleveland**—SCHOOL ADDNS.—East Cleveland Bd. of Educ., 1849 Shaw Ave., $1,750,000 bond election Nov. 5, student center and music center and swimming pool at Shaw High School and renovating 6 elementary schools $1,750,000. Fulton, DelaMotte & Assoc., 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 2/18.

▲ **O., Mount Healthy**—SCHOOLS—Mount Healthy City School Dist., Mount Healthy, defeated $1,000,000 bonds, schools. CD 5/21.

▲ **Okla., Tulsa**—SCHOOLS—Bd. of Educ., 410 S. Cincinnati St., Tulsa, voted bonds May 21, schools, $8,000,000. CD 6/8/55.

▲ **Tenn., Clarksville**—PLANT—Montgomery Co., Clarksville, constr. of plant, $3,000,000. Trane Co., LaCrosse, Wis., lessee.

▲ **Tex., Corpus Christi**—SCHOOL—Tulosa-Midway Independent School Dist., defeated bonds June 1, expansion imprvs., high school, $1,500,000. CD 12/1/53.

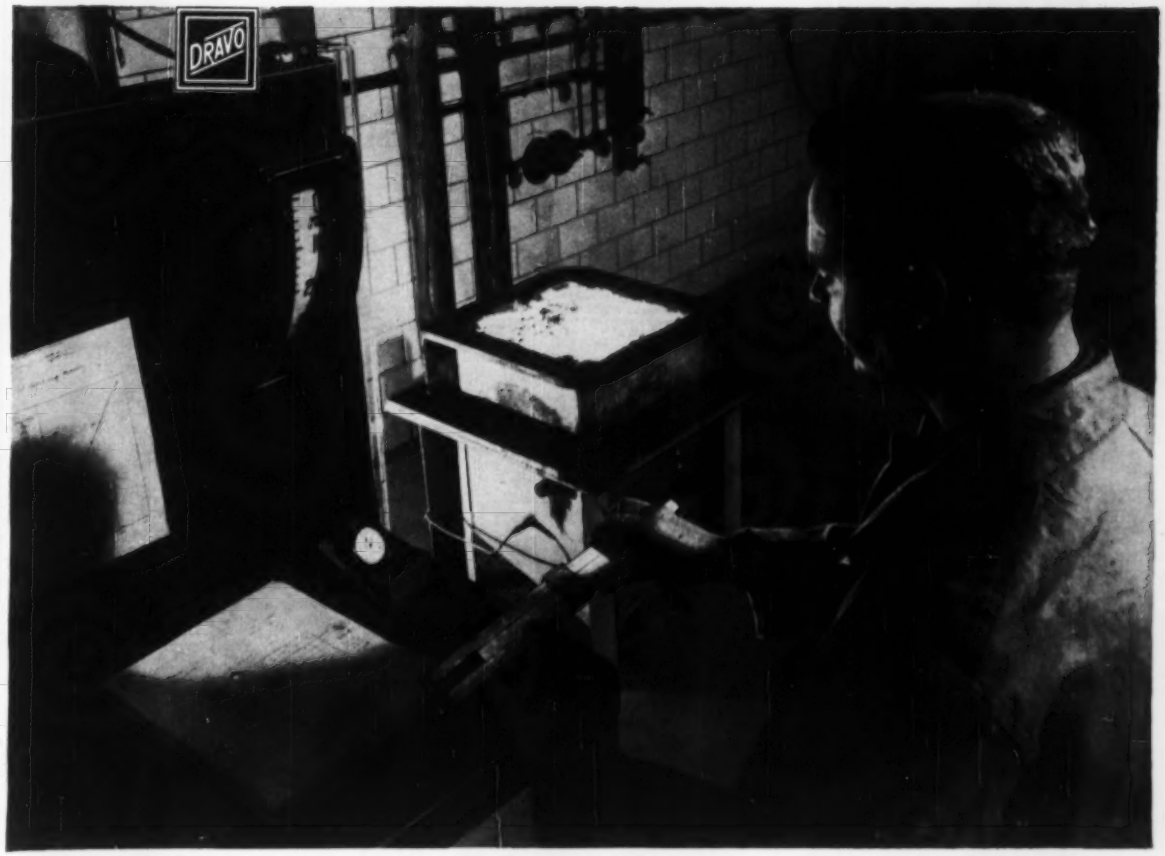
▲ **Utah, Salt Lake City**—OFFICE—State Building Bd., 419 State Capitol, plans by Scott and Beecher, 617 Dooly Bldg., Salt Lake City, Utah, archts., office bldg. for State of Utah, to be built northeast of capitol. $3,000,000. CD 1/30/56.

▲ **Va., Alexandria**—SCHOOLS—Alexandria Bd. Education, City Hall, high school to serve northern section of city, $2,600,000; Francis C. Hammon High School addn., Seminary Rd. at Pickett St., $400,000.

COMMERCIAL BUILDINGS

▲ **Calif., Klamath**—SUBDIVISION—Ernest Pierson Co., 1400 Broadway, Eureka, 230 homes, subdivision, Redwood Park, $3,000,000.

(Continued on page 68)



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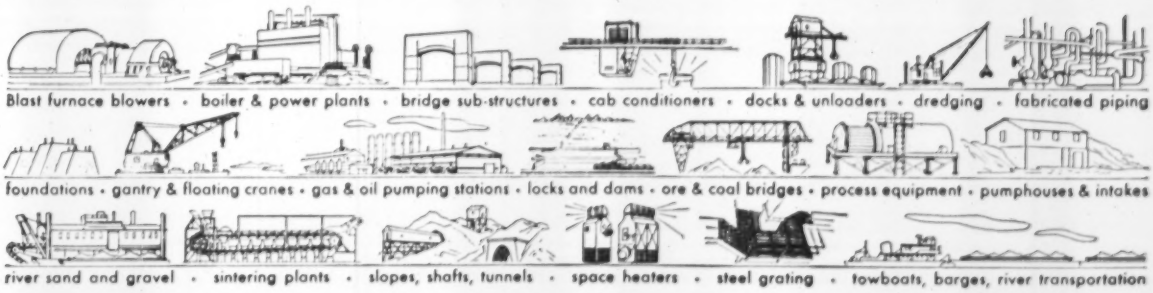
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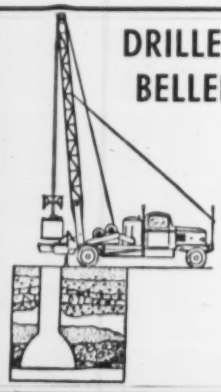

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(Continued from page 66)

▲ **Calif., Los Angeles**—OFFICE BLDG.—Spring St., Realty Co., 621 S. Spring St., plans by Claud Beelman & Assoc., Robert E. Langdon Jr. & Ernest C. Wilson Jr., 7421 Beverly Blvd., Los Angeles, archts., 15 story, 200,000 sq. ft., 273 ft. high, granite and stone facing, steel framing, Q-cell sys., 3 basement floors for parking, office bldg. **$10,000,000.**

▲ **Calif. San Jose**—BOWLING ALLEY, etc.—Mel Weiss & Harold Dobbs, Willard & San Carlos St., Santa Clara, plans by Mario Gaidano, 605 Washington St., San Francisco, Calif., archt., bowling alley, drive-in restaurant and recreation facility, 3½ acre site, Willard and San Carlos St., **$2,000,000.**

▲ **Conn., New Haven**—OFFICE—First National Bank & Trust Co., 42 Church St., New Haven, 5 Story, 75,000 sq. ft., office bldg., Chapel St., part of Church St. Redevelopment Project, **$2,000,000.** CD 5/9/50.

▲ **Conn., Woodbridge**—HOUSES—Harlyn, Inc., 165 Whalley Ave., New Haven, 100 houses "Woodbridge Acres" Brookwood Dr., **$4,500,000.**

▲ **Ky., Louisville**—HOTEL—Morris Landberg & Assocs., 618 N.E. 124th St., North Miami, Fla., plans by Francis Hoffman, 1 Lincoln Rd. Bldg., Miami Beach, Fla., State Fair Hotel, incl., outdoor and indoor swimming pools, **$3,500,000.** CD 6/13.

▲ **La., Shreveport**—CHURCH—South Shreveport Baptist Church, c/o Rev. Bill Everett, Shreveport, plans by J. Cheshire, Peyton, Continental Bank Bldg., Shreveport, chapel and educational bldg., **$350,000;** Sanctuary and educational addn., **$1,000,000.**

▲ **O., Cleveland**—MEDICAL SCHOOL EXPANSION—Western Reserve University, 2040 Adelbert Rd., Cleveland, Zone 6, Medical School expansion, incl. research building, **$3,500,000;** medical school addn., **$4,500,000;** and dormitory for medical students, **$2,000,000.**

▲ **O., Oberlin**—LABORATORY, etc.—Oberlin College, Oberlin, Severance Chemical Laboratory and Sophronia Brooks Auditorium addns., Henry Churchill King Memorial bldg., conservatory of music bldg. and new science bldg., **$10,000,000.**

▲ **R. I., North Providence**—HOUSING DEVELOPMENT—Twin Realty Inc., Hugh Iannucci, Mowry St., Providence, plans by Castellucci & Galli Inc., 407 Smithfield Ave., Pawtucket, archt., 65 houses, "Summit Hills" Housing development, off High St., Service Ave. and Smith St., $1,400,000, bids for streets, sewers, July.

▲ **Tex., Houston**—SHOPPING CENTER—Westbury Co., c/o Julian T. Keith, Vice Pres., 4900 Willowbend Dr., plans by Wilson Morris & Crain, 3330 Graustark St., Houston, Tex., shopping center, 26 acre tract south of Weingarten's 7 acre tract in Westbury subdivision, **$4,800,000.**

▲ **Tex., San Antonio**—HOTEL—Sam Jorrie, 131 San Pedro Ave., 162 unit motor hotel incl. swimming pool, 5th St. along San Antonio, River, **$1,134,000.**

▲ **Va., Fairfax**—HOMES—Cornell Constr. Co., Fairfax Country Club, plans by Jack Cohen, 7961 Eastern Ave., Silver Springs, Md., archt., 350 homes, "Fairfax Country Club Estates. **$7,000,000.**

▲ **Wash., Seattle**—OFFICE—Metropolitan Bldg. Corp., White, Henry Stuart Bldg., Zone 1, plans by Jones & Bindon, Hoge Bldg., Zone 1, and Skidmore, Owings & Merrill, 1 Montgomery St., San Francisco, Calif., consult. archts., 21-story office bldg., **$10,000,000.** 6/24/47.

▲ **Ont., Toronto**—REHABILITATION CENTER—Society for Crippled Children, 92 College St., Toronto, plans by Stanford & Wilson, 90 Eglinton Ave. E., Toronto, 105-bed, 175,000 sq. ft. rehabilitation center, Bayview Ave., 10-acres adjoining property of Canadian National Institute for the Blind, **$2,000,000.** CD 2/25/54.

INDUSTRIAL BUILDINGS

▲ **Ill., East Peoria**—WAREHOUSE—The Kroger Co., 35 E. 7th St., Cincinnati, O., 1 story brick, 225,000 sq. ft. central warehouse, bit paving, Carver land, **$2,500,000.**

▲ **Mass., Quincy**—OFFICE—Bethlehem Steel Co., Shipbuilding Div., 97 E. Howard St., plans by Perry, Shaw, Hepburn & Dean, 31 St. James Ave., Boston, office bldg., Atomic Research Laboratory addn., **$1,000,000.**

▲ **Mass., South Braintree**—PLANT—Walworth Co., 798 E. 1st St., South Boston, manufacturing plant and small bldg. for research, incl. offices, Highlands Section, **$5,000,000.** Charles T. Main Inc., 80 Federal St., Boston, consult. engr.

▲ **O., Middletown**—WAREHOUSE—Sorg Paper Co., Middletown, warehouse and imprvs. **$1,000,000.**

▲ **Tex., Baytown**—RUBBER PLANT—United Rubber and Chemical Co., Baytown, synthetic rubber plant modernization; incl. concrete metal bldgs., appurtenances, Wooster, **$15,000,000;** Zimmerman Inc., 1700 Sansom St., Philadelphia, Pa., consult. engr.; power plant unit and electric lines, Wooster, **$400,000.**

UNCLASSIFIED

▲ **Calif., Oakland**—PARK FACILITIES—Oakland Park Dpt., 634-14th St., park facilities addns. at Lakeside Park. **$1,000,000.**

▲ **South Dakota**—RURAL DISTRIBUTION LINES, etc.—East River Electric Power Co-operative, Madison, 118 mi. 69 kv and 34.5 kv transmission lines, 11,250 diesel generating plant, substation facilities and sys imprvs., Minnehaha Co. **$4,720,000.** (RE approved) Ulteig Engr. Corp., 1114½ Main St., Fargo, N. D., consult. engrs. CD 6/18.

Cold mix from stock pile being used for patching.

How To Assure *Permanent* Pavement Patching—Hot or Cold—In Any Season

City street departments as well as county and state highway departments throughout the country are becoming more and more sold on the *extra value* of McConnaughay Weatherproof Emulsified Asphalt for pavement patching. Mixtures made with these emulsions assure superior results in any season... cold mixtures used immediately or stock-piled for future use... hot mixtures for on-the-spot patching, particularly in cold weather. You can also depend upon these emulsions for durability in application types of patching.

You can be sure of fast, dependable service on asphalt emulsions and mixes by calling any of the McConnaughay Licensees listed. This co-ordinated group, guided by a central organization, is made up of experienced manufacturers and contractors who fully understand your problems, who offer engineering and testing services on paving materials and mixtures as well as on-the-job advice. For Specification No.10 on Patching (or for any other Specification listed) write or 'phone your nearest McConnaughay Licensee or contact...

Winter patching; hot mix prepared with Emulsified Asphalt.

Any tar kettle with spray attachment will produce durable patches with proper use of Emulsified Asphalt.

McCONNAUGHAY LICENSEES Operating K. E. McConnaughay Emulsified Asphalt Plants

1. E. A. Mariani—Emulsified Asphalt
   Hooker's Point, *Tampa, Florida*
2. Bituminous Materials Co.
   Metairie, Louisiana
   Serving Alabama, Mississippi, and Louisiana
3. Asphalt Products Co., Inc.
   Powell Ave., *Nashville 4, Tenn.*
4. Bituminous Materials Co.
   P. O. Box 267, *Terre Haute, Ind.*
5. Wabash Valley Asphalt Co.
   Terre Haute, Indiana
6. Brookman Construction Co.
   17th & Gharkey Sts., *Muncie, Ind.*
7. Fauber Construction Co.
   Lafayette, Indiana
8. Asphalt Materials & Construction, Inc.
   960 E. 22nd, *Indianapolis 2, Ind.*
9. Ready-Mix Asphalt, Inc.
   P. O. Box 882, *Fort Wayne 6, Ind.*
10. Doherty and Swearingen Co.
    53 Main St., *Yarmouth, Maine*
11. James Huggins & Sons, Inc.
    Medford & Commercial Sts.
    Malden 48, Massachusetts
12. Albany Asphalt & Aggregates
    75 State St., *Albany, New York*
13. Knight Paving Products, Inc.
    1655 Union Rd., *Gardenville, N. Y.*
14. Knight Paving Products, Inc.
    Vine Street, *Ithaca, New York*
15. Knight Paving Products, Inc.
    1980 East Avenue, *Rochester 10, N. Y.*
16. Walsh & Kelly
    R. R. #2, *Gary, Indiana*
17. Bituminous Materials Co.
    416 S. Water St., *Jackson, Mich.*
18. Bituminous Materials Co.
    318 Atlantic St., *Bay City, Mich.*
19. Emulsions, Inc.
    Lawrenceville, Illinois
20. Bituminous Materials & Supply Co.
    415 Maple St., *West Des Moines, Iowa*
    Plants:
21. *Spirit Lake, Iowa*
22. *Iowa City, Iowa*
23. *Menlo, Iowa*
24. Emulsified Asphalt Co.
    Kuttawa, Kentucky
25. Bituminous Materials Co.
    Escanaba, Michigan
26. Knight-Bitumen Corp.
    Watertown, New York
27. Seaco, Incorporated
    2700 Industrial Drive, *Columbia, S. C.*
    Eastern Representative:
    John A. Dow
    157 Church St., *New Haven 10, Conn.*

SPECIFICATIONS OF THESE COLD-MIX PROCESSES AVAILABLE ON REQUEST

1—Penetration Macadam, 2—Open-Graded Plant Mix, 3—Open-Graded Road Mix, 4—Dense-Graded Plant Mix, 5—Dense-Graded Road Mix, 6—Mat Coat, 7—Seal Coat, 8—Sand Mix, 9—Sand Honing, 10—Patching, 11—Mastic-Mix, 12—Driveway Construction.

K. E. McCONNAUGHAY LAFAYETTE INDIANA

EMULSIFIED ASPHALT PLANTS AND PROCESSES

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 15 Connecticut
STREETS AND ROADS
July 10 Rhode Island July 15 Connecticut
July 23 Massachusetts

▲ **Conn, Hartford**—BA 7/18—Greater Hartford Bridge Auth., 71 Capitol Ave., substructure of Glastonbury-Wethersfield Bridge across Connecticut River, 13 piers, 2 abutments Glastonbury and Wethersfield. $3,900,000. DeLeuw, Cather & Brill, Inc., 202 E. 44 St., New York, N. Y., engr. Barstow, Mulligan & Vollmer, 112 W. 42 St., New York, N. Y., designing engrs. CD 10/1.

HEAVY CONSTRUCTION—LB & CA

▲ **CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,
Savin Constr. Corp., 10 Village St., Hartford, Conn., LB $3,778,048 (9 bidders) Proj. 164-81, 4-lane rein.-con., 18,130 lin. ft., Hartford-Springfield Expressway, incl. substructures for 4-span welded girder bridge over Farmington River and composite rolled beam bridge at Kenned Rd., Hayden Station Rd., Bradley Field Connector and Center St., Fed. Aid Proj. IN I-139 (14). Bids June 24. CD 6/5.

BUILDINGS—LB & CA

▲ **Price & Blitz,** High View Terrace, New Canaan, Conn. Owner Builds. $3,400,000. 80 HOUSES, Cheese Spring Rd., WILTON, CONN.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 9 New Jersey

BUILDINGS—BA

▲ **N. Y., Utica**—AUDITORIUM—BA 7/26—City, City Hall, municipal auditorium and sports arena, Whitesboro and Oriskany Sts. $3,000,000. Extended date. Gehron & Seltzer, 101 Park Ave., New York, Zone 17, archts. CD 6/41.

▲ **N. Y., Brooklyn**—HOUSING—BA On Or About 10/15—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYS-73, Bushwick Houses, incl. 1,220 apartments at Humboldt St., Moore St. and Bushwick Ave., Flushing Ave. $12,000,000. Keally & Patterson, 17 E. 49 St., New York, Zone 19, archts. CD 4/4/55.

▲ **N. Y., Jamaica**—HOUSING—BA On Or About 12/10—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYS-38 (federal), Baisley Park Homes, incl. 386 apartments at New York Blvd., 157 St. and L. I. RR., $3,860,000. Ferrenz & Taylor, 152 W. 42 St., New York, Zone 36, archts.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton,
Franklin Contg. Co., 12 Central Ave., Newark, CA $5,092,636 (8 bidders), grading, paving, bridges and walls 1.438 mi. Route 21 Freeway, Sec. 1A from Williams St. to Roosevelt Ave., Belleville, Fed. Proj. U-126 (9), Essex Co. Awarded June 20. CD 6/18, under LB.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Joseph J. Lawler, secy. Hys., North Office Bldg., State Capitol, Harrisburg, Bids opened 6/21,
Pa.—**E. D. Plummer & Sons,** Chambersburg, Pa., LB $519,777 (1 bidder), rein.-con. bridge, flex. base with bit. surf. 3.03 mi. Traffic Rte. 16 from near Green Co., easterly, FA, Franklin Co.;
Pa.—**Rogers Constr. Co.,** R. D. Bell Mt., Scranton, Pa., LB $259,771 (4 bidders), one I-beam bridge; widening existing pavement with flex. base and surf. new base and existing pavement; grading channell, T. R. 502, Luzerne Co.;
Pa.—**Herbert R. Imbt, Inc.,** Box 155, State College, Pa., LB $101,892 (9 bidders), one rein.-con. bridge over Swamp Creek, east of Hawley Borough, Traffic Rte. 590 and 2,970 ft. crushed aggreg. base with bit. surf. 18 ft. wide, Pike Co.;
Pa.—**McCloskey & Co.,** 1620 W. Thompson St., Phila., Pa., LB $5,486,649 (4 bidders), 2-level hy. rein.-con. bridge decks of Class A rein. con., variable in width over Schuylkill River and conversion part of Schuylkill Expressway to limited access, Philadelphia Co. CD 6/5.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Joseph J. Lawler, secy. Hys., North Office Bldg., State Capitol, Harrisburg, Bids opened 6/21,
Pa.—**Seigmund Gavlik,** Box 44, Glenwillard, Pa., LB $1,046,680 (6 bidders), c. conc. paving, two rein.-con. structures flex. base with bit. surf., incl. 3 bridges, Traffic Rtes. US 422, 3.37 mi. between Elderton and Shelocta Boroughs, FA, Armstrong and Indiana Counties; LB $480,754, (3 bidders), wid'n. existing pavement with flex. base and surf. existing pavement and new base with bit., also new base replacement 24 ft. wide for approach adjustments on Traffic Rte. 380, 4.04 mi. northeasterly from Wilkinsburg Borough, Penn Twp., Allegheny Co.;
Pa.—**Kim Company,** Box 127, Harrisburg, Pa., LB $3,398,687, (5 bidders) conversion 57,430 ft. divided hy. to limited access; parallel roads incl. 8 bridges, Traffic Rte. 111, Conewago, Newberry, and Fairview Twps., York Co.;
Pa.—**Emrich Constr. Co.,** Manchester, Pa., LB $199,203 (2 bidders), crushed aggreg. base with bit. surf. 24 ft. wide incl. 1 concrete deck bridge on Traffic Rte. 116, N. Codorus Twp., Spring Grove Boro, York Co.;
Pa.—**Banks & Schiel Paving Co.,** 303 Market St., Kingston, Pa., LB $455,204 (4 bidders), wid'n. existing road with c. conc. base variable in width, also repair to steel truss bridge on traffic Rte. US 309, Monroe and Eaton Twps., Wyoming Co.;
Pa.—**Weaver Coal & Constr. Co.,** R. D. 3, Greensburg, Pa., LB $758,684 (2 bidders), crushed aggreg. base with bit. surf. 22 ft. wide, incl. 3 rein.-con. bridges. L. R. 64125(2), E. Huntingdon & Hemfield Twps., Westmoreland Co.;
Pa.—**Ezra Stipp Constr. Co.,** Love Rd., Scranton, Pa., LB $116,034 (3 bidders), surf. existing road with bit. surf. variable in width, L. R. 5, Lackawanna Co.;
Pa.—**Kebert Constr. Co.,** R. D. 6, Meadville, Pa., LB $222,212 (2 bidders), wid'n. existing road with crushed aggreg. base variable in width and surf. new base and existing pavement with bit. surf. Traffic Rte. 19, Waterford Bro, Waterford Twp., Erie Co. CD 6/5.

BUILDINGS—LB & CA

▲ **Allen Bros.,** 596 River Road, Fair Haven, N. J., Own Forces, $3,500,000, 138 HOUSES, Twin Brooks, Route 35 off Kings Hy., FAIR HAVEN, N. J.

▲ **Welsh Grant Constr. Corp.,** 270 Knorr St., Phila., Pa., Separate Contracts, $5,290,000. 529-unit RESIDENTIAL DEVELOPMENT, Glenview Park, etc., WARMINSTER, PA. Harris Henry & Potter, Inc., R. D. 2, Doylestown, Pa., engrs.

▲ **Standard Constr. Co., Inc.,** 1010 Vermont Ave. N. W. Wash. 5, D. C., CA $5,248,785. HOUSING Proj. D.C. I-21, Greenleaf Gardens, incl. 456 dwelling units between Eye and N Sts. and 3 and Canal Sts. N.W., WASH., D. C. National Capitol Housing Auth., 1729 New York Ave. N.W., Wash., D. C. Bids June 18, awarded June 26. CD 6/20, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 12 Kentucky
STREETS AND ROADS
July 12 Kentucky

BUILDINGS—LB & CA

▲ **Taylor Constr. Co.,** 2875 N. LeJeune Rd., Miami, Fla., LB $5,696,000 (7 bidders) HOSPITAL, 4300 Alton Rd., MIAMI BEACH, FLA. Mount Sinai Hospital of Greater Miami, 300 Alton Rd., Miami Beach, Fla. Bids June 21. CD 6/21.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 9 Indiana
STREETS AND ROADS
July 9 Indiana July 16 Illinois

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,
Baker & Hickey Co., 2170 Eakin Rd., Columbus, O., LB $5,082,967, est. $4,910,000 (3 bidders) first section of Columbus Expressway. Bids June 25. CD 6/19.

▲† **J. L. Simmons Co., Inc.,** Inland Bldg., Indianapolis, Ind., LB $3,270,341, maintenance hanger and supplementary facilities at Bakalar Air Force Base, COLUMBUS, IND. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids June 18. CD 5/29.

BUILDINGS—LB & CA

▲ **Dubin Housing Corp.,** 4236 Lee Rd., Cleveland 28, O., Own Forces, $7,500,000. 500 HOMES for Negroes, E. 174, 175 and 176 Sts., CLEVELAND, O. National Homes, Lafayette, Ind., archt. CD 5/16.

▲ **Koppers Co.,** Koppers Bldg., Pittsburgh, Pa., CA Approx. $14,000,000. two batteries of coke ovens at Cleveland Works, units will have 51 ovens each, CLEVELAND, O. Republic Steel Corp., 3175 Independence Ave., Cleveland, O.

▲ **Turner Constr. Co.,** 150 E. 42 St., New York, N. Y., CA Total est. $50,000,000 prime contractor to manage contract awards for foundations, superstructure, paving, underground service lines, electrical work and masonry, for 1,500,000 sq. ft. FACTORY, OFFICE and SERVICE BLDGS., COLUMBUS, O. Western Electric Co., 195 Broadway, New York, N. Y. CD 2/25.

▲† **T. C. Bateson Constr. Co.,** 6800 Delton Dr., Dallas, Tex., LB $13,897,000, 12 story, 478,000 sq. ft. HOSPITAL BLDG. and bit. paving, Spec. No. 5576/56. GREAT LAKES, ILL. Ninth Naval Dist., Great Lakes Training Center, Great Lakes, ILL. Schmidt, Garden & Erickson, 104 S. Michigan Ave., Chicago, Ill., archts. Bids June 20. CD 5/9.

▲ **John Brunsink, Cascade,** Mich., Owner Builds, $3,000,000, 75 brick HOMES, "Thornapple Downs", Thornapple River Development, GRAND RAPIDS, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—LB & CA

▲† **J. W. Bateson Co., Inc.,** 13307 Walnut Hill Station, Dallas, Tex., LB $7,397,600, 500 Capehart Family HOUSING UNITS, Title VIII, Foster Air Force Base, ENG-41-656-57-60, VICTORIA, TEX. Purchasing & Contg. Office, Foster Air Force Base, Victoria, Tex. Bids June 20. CD 6/10.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 17 California
STREETS AND ROADS
July 17, 18, 25 California

▲ **Washington**—BA 7/23—Chelan County Public Utility Dist., 327 N. Wenatchee Ave., Wenatchee, general contract completing Rocky Reach Dam on Columbia River, Bids June 14 rejected, LB $58,561,522, CD 6/18, under LB.

BUILDINGS—BA

▲ **Calif., Oakland**—OFFICE—BA 7/16—Kaiser Center, Kaiser Bldg., 1924 Broadway, grading foundation for 28 story office. Total cost $30,000,000-$40,000,000. Welton Beckett & Assoc., 5657 Wilshire Blvd., Los Angeles, archts. CD 5/10/56.

HEAVY CONSTRUCTION—LB & CA

▲ **Engineers, Ltd., Pipeline Co.,** 200 Bush St., San Francisco, Calif., CA $15,000,000. constr. 138 mi. 3/4 in. pipe looping on its super inch pipe line, will complete looping along full length of natural gas line which stretches 500 mi. from Topcock, Ariz. to San Francisco Bay Area, ARIZONA AND CALIFORNIA. Pacific Gas & Electric Co., 245 Market St., San Francisco 6, Calif. CD 7/21/52.

BUILDINGS—LB & CA

▲ **Campbell Erickson and Lawrence Constr. Counties,** 3020 Vee St., Sacramento, Calif., CA $3,724,674 (5 bidders) HIRAM W. JOHNSON SENIOR HIGH SCHOOL, 65th and 14 Ave., incl. swimming pool and CADET BLDG., SACRAMENTO, CALIF. Sacramento City Unified School Dist., c/o Supt., 16th and N. St., Sacramento, Calif. Harry J. Devine, 1012 J St., and Charles F. Dean, 1521 I St., Sacramento, Calif., archts. Bids June 24. CW 6/4.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
July 8 Alberta July 12, 16, 19 British Columbia
STREETS AND ROADS
July 10, 17 Ontario

BUILDINGS—BA

▲ **Ont., Brantford**—HOSPITAL WINGS—BA 7/8—Brantford General Hospital, Terrace Hill and Ontario St., two 9 story, no bsmnt., 45x180 ft., brick hospital wings. $4,468,958. Harold J. Smith, 62 Charles St. E., Toronto, archt. Walace, Carruthers & Assocs. Ltd., 92 Yorkville Ave., Toronto, engrs. CD 5/5/52.

HEAVY CONSTRUCTION—LB & CA

▲ **Terminal Constr. Co. Ltd.,** Dominion Sq. Bldg., Montreal, Que. and **Tallman Constr. Co. Ltd.,** 600 Panet Rd., Winnipeg, Man., LB $7,405,163 using asphaltic concrete and $6,298,683 using plain concrete. 2 runways, each 8,200x200 ft., taxiways, parking apron and installing drainage, lighting facilities Edmonton International Airport, near Leduc, EDMONTON, ALTA. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids June 13. CD 5/31.

BUILDINGS—LB & CA

▲ **E. G. M. Cape & Co.** (1956) Ltd., 79 Scollard St., Toronto, Ont., CA Est. $3,500,000. Unit 5, superstructure in connection with STEAM ELECTRIC POWER PLANT exten., Unwin Ave., near Leslie St. harbor front, Toronto, TORONTO, ONT. Hydro-Electric Power Comm. of Ontario, 620 University Ave., Toronto, Ont. Bids June 3. CD 5/1.

▲ **Vickers-Krebs Ltd.,** Maisonneuve St., Montreal, Que., CA $6,000,000. gas recovery PLANT, incl. gas cleaning and cooling plant, sulphuric acid plant and liquid sulphur dioxide plant at nickel smelter and refinery, CHICOUTIMI, QUE. Eastern Mining & Smelting Corp. Ltd., 335 Bay St., Toronto, Ont. Montreal Engineering Co. Ltd., 244 St. James St. W Montreal, Que., engr.

(Proposal Advertisement see pp. 86 to 89)

This crew can save you money on your next job

These four experts work for you when you place your Workmen's Compensation and Public Liability insurance with The Travelers. Here's how they can save you money on *your* next job:

Safety Engineer: He's an expert at stopping accidents. He's backed by The Travelers—the company that's spent over $100 million on accident and fire prevention. Travelers safety engineers can help you wherever you work.

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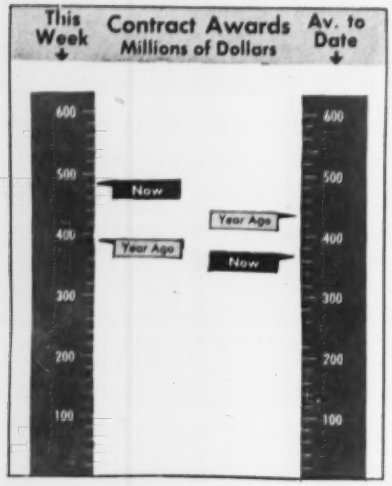
THE TRAVELERS

INSURANCE COMPANIES, HARTFORD 15, CONNECTICUT

All forms of business and personal insurance including Life • Accident • Group • Fire Marine • Automobile • Casualty • Bonds

Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 27 wks 1957 millions	Chge '56-'57 %
Federal	$96.0	$1,477.9	+55
State and Municipal	177.4	3,828.4	+12
Total Public	273.4	5,306.3	+21
Total Private	210.2	4,622.8	−37
U. S. Total	$483.6	$9,929.1	−16
By Type of Work			
Waterworks	$2.9	$203.5	+23
Sewerage	24.1	282.6	−12
Bridges	30.4	397.9	+19
Highways	50.0	1,571.5	+27
Earthwork, Waterways	29.9	619.2	+40
Buildings:			
Public, Excl. Housg.	59.3	1,565.1	+9
Public Housing	30.6	384.9	+107
Private Housing	52.4	1,615.0	−48
Commercial	35.4	917.8	−7
Industrial	100.6	1,834.0	−37
Unclassified	68.0	937.6	−5
U. S. Total	$483.6	$9,929.1	−16

NOTE: Minimum size projects included are: Waterworks and waterways, $44 000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

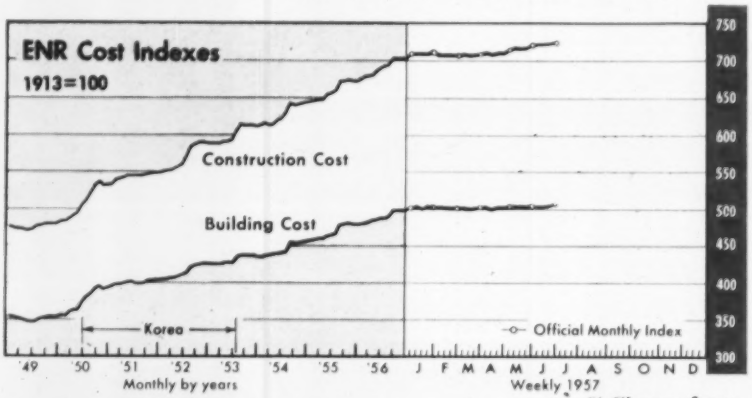
	Week of June 27	Cum. 26 wks 1957 millions	Chge '56-'57 %
Corporate Securities	$111.0	$3,152.2	+40
State and Municipal:			
All Except Housing	58.9	2,810.0	+11
Housing	65.3	155.8	+278
Federal Loans	3.1	116.6	+49
Federal Aid	...	1,965.0	+117
Total Nonfederal	$238.3	$8,199.6	+41
Federal Appropriations:			
In U. S.	$3.0	$30.7	−88
Outside U. S.	2.5	15.5	+20
Total New Capital	$243.8	$8,245.8	+36

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of June 27 1957	% Change from May 30 1957	% Change from June 28 1956
Construction Cost	724.15*	+0.4	+4.2
Building Cost	506.62*	+0.5	+3.6

*Official Monthly Index for July

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518



WAGE RATES, 20-cities' average	July 1957	% Change from June 1957	% Change from July 1956
Common	$2.299	+0.7	+5.1
Skilled (average 3 trades)	3.543	+0.9	+4.5
Bricklayers	3.807	+0.8	+3.6
Structural Ironworkers	3.528	+0.8	+5.3
Carpenters	3.293	+1.2	+4.7
Equipment operators (average three types)	3.169*	+0.3**	+3.8

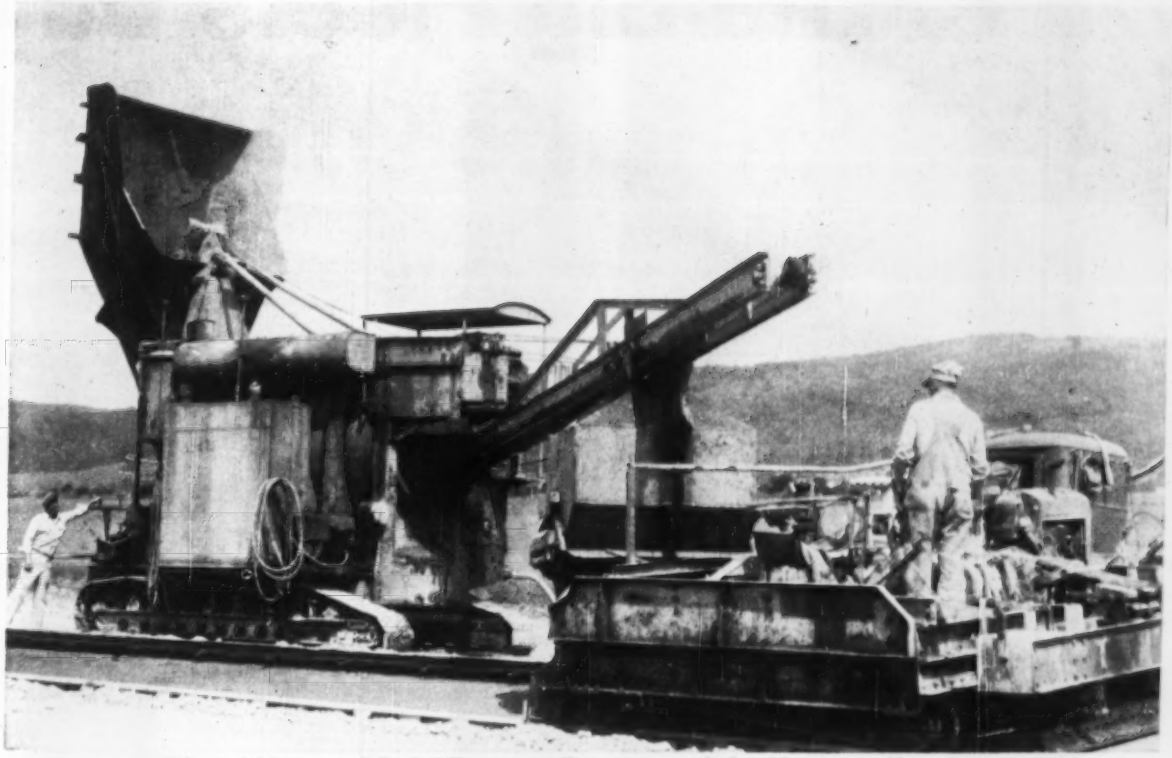
* June ** May

MATERIAL PRICES, 20-cities' average			
Structural Steel (average 3 mills), per cwt	5.00	0	+8.7
Lumber, 2x4 Fir, per M fbm	115.555	+0.1	−4.2
Lumber, 2x4 Pine, per M fbm	101.800	+0.1	−1.7
Cement, bulk, per bbl	3.887	0	+4.3
Sand, per ton	2.450	0	+2.0
Ready-mixed concrete, per cu yd	13.568	0	+2.8
Gypsum sheathing, ½"x2'x8', per Msf*	62.728	0	+0.6
Fiber board sheathing, ½" sq. ed, per Msf*	72.614	+1.2	+3.1
Mineral Wool insulation, 3' batts, per Msf*	71.632	+0.3	−0.8
Crushed stone, 1½", per ton, CL	2.829	0	+1.9
Concrete blocks, sand gravel, 8"x8"x16", each*	0.226	0	+2.3
	June 1957	**May 1957**	**June 1956**
Brick, common, per M	37.525	+0.3	+3.5
Lime, hydrated finishing, per ton, CL	36.299	0	+7.2
Structural clay tile, 3x12x12", per M, 2,000 up*	178.897	0	+2.6
Vitrified clay sewer pipe, std 12", per ft	1.299	−1.8	+5.6
Concrete sewer pipe, 12", per ft	1.154	0	+6.7

* Delivered, trucklots

ENR INDEX REVIEW

	Construction Cost		Building Cost		Volume	
1956	1913 = 100	1949 = 100	1913 = 100	1949 = 100	1913 = 100	1949 = 100
July	694.75	145.64	489.23	139.07	740	214
Aug	696.31	145.97	491.22	139.63	583	168
Sept	704.91	147.77	500.10	142.16	580	168
Oct	703.88	147.56	499.54	142.00	729	211
Nov	704.13	147.61	500.48	142.27	542	157
Dec	703.82	147.55	500.17	142.18	624	180
1956 Average	**692.37**	**145.14**	**490.76**	**139.50**	**671**	**194**
1957						
Jan	707.90	148.40	501.96	142.69	504	146
Feb	710.06	148.85	502.59	142.87	546	158
Mar	708.64	148.56	501.37	142.52	553	160
Apr	709.30	148.69	501.37	142.52	564	163
May	715.70	150.04	503.01	142.99	553	160
June	721.36	151.22	504.17	143.32	588	170
July	724.15	151.81	506.62	144.01	...	...



Blaw-Knox MultiFoote Paver with Hydraulic Controls gives you more complete mixing in a shorter Mixing Cycle

You will be sure of higher production for hour-after-hour and day-after-day when you have a Blaw-Knox MultiFoote working in your spread of paving equipment. Faster skip operation gets the batch into the mixer with no loss of time. Hydraulic controls of batch transfer and discharge give immediate response in the automatic cycle. Cone-shaped drums assure you of thorough mixing in a shorter time or more complete mixing in a specified time than is possible in the cylindrical-shaped drum of ordinary mixers. Hydraulic controls for raising and lowering the A-Frame enable the paver to get under overpasses, bridges or other low overhead clearances and at the same time give you the advantages of single-cable skip control with its high speed, simple reeving and low maintenance cost.

These MultiFoote advantages combined with spreading or spotting action of the hydraulic operated bucket and simplicity of Paver design with its get-at-ability and freedom from excessive number of parts assure better day-after-day performance with lower maintenance costs. MultiFoote Pavers are available as single or double drum models in the 34E size.

All Blaw-Knox Paving Equipment Job-Proved

Blaw-Knox "Complete Package" Paving equipment has become the first choice of contractors throughout the country. Contractors with a spread of Blaw-Knox equipment know that they can depend on its many tested and proved design features plus one distributor source for parts and service to keep their jobs on schedule. If you are planning to bid on concrete paving, plan to use the only line of equipment with experience—see your nearest Blaw-Knox Distributor today.

For more information on any of these units send for the following bulletins by number — MultiFoote, No. 2616; Road Forms, No. 2370; Finisher, No. 2517; Subgrader, No. 2227-R; Batch Plants, No. 2488; Spreader, No. 2485.

BLAW-KNOX

BLAW-KNOX COMPANY

Construction Equipment Division

41 Charleston Ave., Mattoon, Illinois

The Big Fleets buy

Ford's Tandem Models go modern in a big way! G
up to 45,000 lb., GCW's up to 65,000 lb. Wide ch
of engines and chassis components permit you to
your type of hauling conditions.

WAVY

Why? . . . because on-the-job performance and low operating costs prov FORD trucks cost less

Take a tip from the men who buy trucks every year. Official truck registration data shows that owners of America's biggest commercial truck fleets are buying more Ford trucks than any other make!

Contractors and suppliers, engaged in heavy construction work, have found Ford trucks are best for their fleets, too. To begin with, Ford's to modern Short Stroke power and sturdy chassis construction, operating costs and "shop time" are reduced. Another important Ford plus is longer truck life—a fact certified by independent insurance experts.

Add it all up—you'll find Ford trucks do cost less! Contact your Ford Dealer . . . let him show you why the big fleets are buying more Ford trucks than any other make.

*Based on comparison of manufacturers' suggested retail prices

FORD TRUCKS COST LESS

LESS TO OWN — LESS TO RUN — LAST LONGER, TOO!

more FORD TRUCKS than any other make!

PAGES

ughout. New, more
and chassis.
o 60,000 lb.

companies in the Construction Industry that have picked Ford trucks for their fleets...

RUCTION CO.

UCTION CO.

ANY
Belleville, Illinois

D. B. THORNTON, INCORPORATED
Atlanta, Georgia

S & W CONSTRUCTION COMPANY
Memphis, Tennessee

KAFFIE LUMBER & BULK BARITES, INC.
Corpus Christi, Texas

MYERS & QUIGG INCORPORATED
Washington, D. C.

LATEX CONSTRUCTION CO. OF GEORGIA
Atlanta, Georgia

PARK CONSTRUCTION COMPANY
Minneapolis, Minnesota

J. H. DURRANCE COMPANY
Fort Lauderdale, Florida

BROWN & ROOT, INC
Houston, Texas

BUILDERS MATERIAL, INC
Cedar Rapids, Iowa

TEXAS BITULITHIC COMPANY
Dallas, Texas

J. H. POMEROY & CO., INC.
San Francisco, California

WESTERN CONCRETE
Los Angeles, California

B. O. WILLIAMS CONSTRUCTION CO.
Richmond, Virginia

IMPERIAL PAVING COMPANY
Oklahoma City, Oklahoma

UNION BUILDING & CONSTRUCTION CORP.
Passaic, New Jersey

BAYER & MINGOLLA
Worcester, Massachusetts

MORRISON-KNUDSEN COMPANY, INC.
Boise, Idaho

DEL E. WEBB CONSTRUCTION CO.
Phoenix, Arizona, Los Angeles, Calif.

The Big Fleets buy

Ford's Tandem Models go modern in a big way! GVW's up to 45,000 lb., GCW's up to 65,000 lb. Wide choice of engines and chassis components permit you to meet your type of hauling conditions.

Why? . . . because on-the-job performance and low operating costs prove FORD trucks cost less

Take a tip from the men who buy trucks every year. Official truck registration data shows that owners of America's biggest commercial truck fleets are buying more Ford trucks than any other make!

Contractors and suppliers, engaged in heavy construction work, have found Ford trucks are best for their fleets, too. To begin with, Ford's initial costs are low. Many models are priced below all competitive makes. For example, the new Ford Tilt Cab models are America's lowest-priced!*

And it costs less to run a Ford truck. Thanks to modern Short Stroke power and sturdy chassis construction, operating costs and "shop time" are reduced. Another important Ford plus is longer truck life—a fact certified by independent insurance experts.

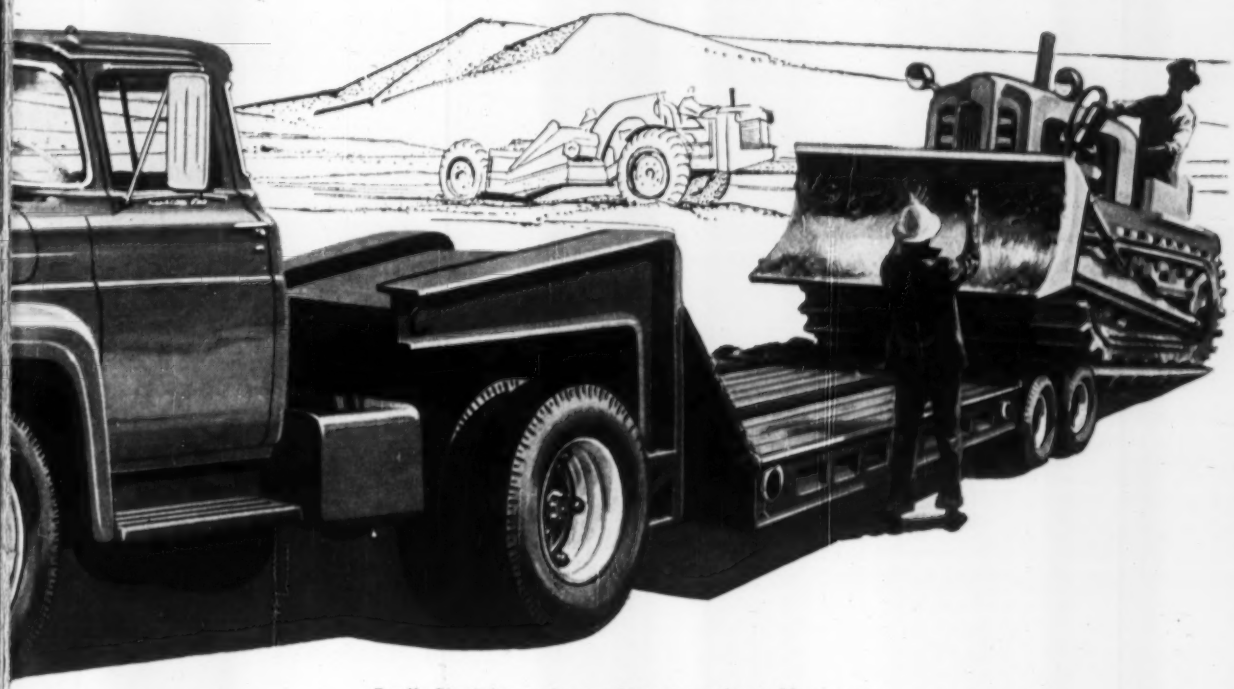
Add it all up—you'll find Ford trucks do cost less! Contact your Ford Dealer . . . let him show you why the big fleets are buying more Ford trucks than any other make.

*Based on comparison of manufacturers' suggested retail prices

FORD TRUCKS COST LESS

LESS TO OWN — LESS TO RUN — LAST LONGER, TOO!

more FORD TRUCKS than any other make!



Ford's Big Jobs are heavy-duty throughout. New, more durable engines. New stronger cabs and chassis. Up to 45,000-lb. GVW, GCW's up to 60,000 lb.

Representative companies in the Construction Industry that have picked Ford trucks for their fleets...

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Peoria, Illinois

EDWARD H. MEYER CONSTRUCTION CO.
Neenah, Wisconsin

M. HOEFFKEN COMPANY
Belleville, Illinois

D. B. THORNTON, INCORPORATED
Atlanta, Georgia

S & W CONSTRUCTION COMPANY
Memphis, Tennessee

KAFFIE LUMBER & BULK BARITES, INC.
Corpus Christi, Texas

MYERS & QUIGG INCORPORATED
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Houston, Texas

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Cedar Rapids, Iowa

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J. H. POMEROY & CO., INC.
San Francisco, California

WESTERN CONCRETE
Los Angeles, California

B. O. WILLIAMS CONSTRUCTION CO.
Richmond, Virginia

IMPERIAL PAVING COMPANY
Oklahoma City, Oklahoma

UNION BUILDING & CONSTRUCTION CORP.
Passaic, New Jersey

BAYER & MINGOLLA
Worcester, Massachusetts

MORRISON-KNUDSEN COMPANY, INC.
Boise, Idaho

DEL E. WEBB CONSTRUCTION CO.
Phoenix, Arizona, Los Angeles, Calif.

Weekly Award Rate in June Is This Year's Best

A sharp upturn in both private and state and municipal heavy construction awards in June lifted the month's weekly contract award volume to its highest point this year.

With $730 million in private awards in June, this type of construction forged 14% ahead of May on a weekly average basis. Both mass housing and industrial building picked up enough momentum to offset declines in commercial building and private unclassified projects.

Public works contracts outstripped private awards with $830 million reported to ENGINEERING NEWS-RECORD and CONSTRUCTION DAILY. But, on a weekly average basis, public works awards slipped 1% below the May pace despite big gains recorded for highways, bridges and sewerage projects.

Highways set a new weekly record in June; bridge awards came in at the best weekly rate since December, 1953.

Total contract awards for June of $1.56 billion topped the May weekly average by 5%.

• **Industrial building strong**—The most important category in June was industrial building. June contracts of $302 million were up 31% over May.

Major industrial building awards in June included a $100 million plant for the Euclid Road Machinery Division of General Motors at Hudson, Ohio; $62.8 million for two additional generating units for a power plant at New Albany, Ind., for Public Service Co. of Indiana; a $37 million power plant addition to Cleveland Electric Illuminating Co.'s Ashtabula, Ohio, plant; and a $12 million award for a petrochemical plant at Bay City, Mich., for Dow Chemical Co.

For mass housing the June weekly rate was the best this year. It was 12% ahead of May—but 30% below a year ago. Biggest mass housing awards of the month were $15 million for 1,500 units in Brunswick, Ohio; $10.5 million for 586 units of Compton Village at Livonia, Mich., and $10 million for a project in Arlington Heights, Ill.

• **Highway contracts boom**—The weekly rate of highway awards in June was the best on record. Awards averaged $73.3 million per week, 20% better than May and 80% ahead of June, 1956. The month's total received a big boost from awards of $35.5 million for an Illinois tollroad.

In the public buildings other-than-housing category, school construction helped the awards' total climb to $177 million in June, 10% ahead of May and 3% ahead of June 1956. This category also was helped by a $14.3 million award for a naval hospital at Portsmouth, Va.

With $136 million in awards, commercial building edged down 2% from May—but was 14% ahead of June 1956. Biggest June award for commercial building: $10 million for a shopping center in Melrose Park, Ill.

• **Bridges set records**—Contract awards for public bridges totaled $84 million in June. It was the biggest month on record for this type of construction. Biggest awards: $8.1 million for two bridges at Philadelphia and $6.8 million for a bridge at Old Tampa Bay, Fla.

Sewerage contracts in June totaled $69 million—a record for the month. Biggest job: $20.3 million for work at the Hyperion treatment plant in Los Angeles.

Despite a $21.8 million contract let by the New York City Housing Authority, public housing awards totaled only $50 million last month, down 14% from May.

Contracts for earthworks and waterworks fell sharply in June. The month's biggest earthwork contract was $7.3 million for a powerhouse and other structures for Swift Hydroelectric Project No. 2 in the State of Washington.

Engineering Construction Contracts—June '57

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $44,000; *other public works,* $73,000; *industrial buildings,* $93,000; *other buildings,* $344,000.

Four Weeks Thousands of Dollars (000 Omitted)

	June, 1957							U. S. Cumulative Six Months		% Change	Canada June
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1957	1956	'56 to '57	1957
Public Works											
Waterworks	1,644	3,840	2,028	1,877	8,354	2,704	**20,447**	**200,785**	158,378	+27	1,277
Sewerage	1,467	11,900	4,432	12,056	6,717	32,708	**69,280**	**258,475**	308,198	−16	2,067
Bridges	4,381	23,273	11,820	10,690	30,147	3,859	**84,170**	**366,327**	315,854	+16	2,549
Earthwork and waterways	1,918	980	6,074	2,821	8,315	25,532	**45,640**	**589,466**	430,243	+37	24,565
Streets and roads	28,042	26,989	36,422	70,171	77,210	54,384	**293,218**	**1,521,529**	1,181,782	+29	16,440
Public buildings, residential	1,641	24,734	5,261	1,440	11,046	6,284	**50,406**	**354,046**	175,915	+101	6,470
Other public buildings	17,676	47,478	35,147	30,379	24,335	21,751	**176,766**	**1,105,567**	1,014,245	+ 9	18,018
Unclassified	4,237	9,723	14,591	10,241	31,538	20,923	**91,253**	**636,779**	583,044	+ 9	3,678
Total public	**61,006**	**148,917**	**115,775**	**139,675**	**197,662**	**168,145**	**831,180**	**5,032,974**	**4,169,659**	**+21**	**75,064**
Federal government (included in above classifications)	5,352	8,636	43,212	5,928	37,970	44,305	**145,403**	**1,381,890**	899,871	+54	28,335
Private											
Bridges				107			**107**	**1,327**	2,679	−50	186
Industrial buildings	13,242	10,431	5,344	247,009	16,923	9,439	**302,388**	**1,733,319**	2,837,028	−39	6,607
Mass housing	24,834	124,159	13,703	68,754	16,748	28,221	**276,419**	**1,562,636**	3,019,811	−49	27,330
Commercial buildings	16,580	15,522	12,931	42,856	33,487	14,816	**136,192**	**882,640**	961,267	− 8	10,785
Unclassified		354	189	3,353	8,105	3,080	**15,081**	**232,648**	372,869	−38	4,972
Total private	**54,656**	**150,466**	**32,167**	**362,079**	**75,263**	**55,556**	**730,187**	**4,412,570**	**7,193,654**	**−39**	**49,880**
Total Engineering Construction:											
June, 1957—4 weeks	**115,662**	**299,383**	**147,942**	**501,754**	**272,925**	**223,701**	**1,561,367**				**124,944**
May, 1957—5 weeks	125,492	522,261	166,012	330,710	371,197	341,059	**1,856,731**				187,681
June, 1956—4 weeks	102,089	347,719	231,235	319,573	331,014	309,950	**1,621,580**				267,336
Six Months—1957	**622,817**	**2,311,575**	**1,067,690**	**2,045,885**	**1,733,827**	**1,663,.50**		**9,445,544**		**−17**	**869,969**
Six Months—1956	645,337	3,136,375	1,149,114	2,343,608	2,413,976	1,674,903			11,363,313		1,077,711
% Change '56 to '57	−3	−26	−7	−13	−28	−1					−19

• **Regions**—In June, only New England and the Midwest ran ahead of year-ago figures. New England posted a gain because of road and mass housing projects; the middle west because of industrial building, roads and mass housing projects.

Tax Upheld

Ohio Supreme Court backs axle-mile levy

Constitutionality of Ohio's four-year-old axle-mile tax has been upheld by the State Supreme Court. However, the case may be appealed to the U. S. Supreme Court.

George F. Alger Co. of Detroit, a trucking firm, had challenged the right of the state to assess taxes for use of Ohio's highways, citing reciprocal agreements with other states.

The court ruled that Ohio has the right to cancel agreements exempting trucks from other states (notably Indiana and Michigan) from Ohio imposed taxes and that the tax law enacted when voters approved a $500 million construction bond issue in 1953 does not make reciprocity agreements mandatory with the various states.

In a unanimous decision, the court said the tax law is not discriminatory. It held that the Ohio legislature in passing the tax law had the power to make reasonable classifications. Exempting trucks with only two axles and graduating the tax among trucks with more than two axles were actions within the legislature's power, the court said.

"Furthermore," the ruling said, there is no discrimination between interstate and intrastate commerce since the same formula is applied to both forms of commerce.

"Also the tax bears a reasonable relationship to the purpose for which it was created since the use of heavy trucks on highways substantially increases deterioration of such highways."

Although the court ruled in July 1955, that Ohio could not collect tax on trucks from states that had reciprocal agreements exempting those trucks from the levy, it had not previously determined validity of the law. Ohio then canceled the reciprocity agreements with other states, touching off a controversy that resulted in retaliations, arguments and removal of several Ohio-based trucking firms to other states.

Pennsylvania Pike Reprieved

State legislature rejects governor's bill to eliminate Turnpike Commission; gasoline tax cut by one cent

The Republican controlled Pennsylvania legislature evaded Gov. George M. Leader's torpedo aimed at the state's toll highway system. Had it found the mark, the national concept of tollroads and the commission or authority type of administration of public facilities would have been rocked. And it eventually would have wiped out the state's toll highway system (ENR Mar. 28, p. 26).

The legislature, now adjourned, avoided the threat merely by letting the governor's requested legislation and recommendations die in committee. The bill would have replaced the present State Turnpike Commission with a new non-political Turnpike Board of Conservators composed of seven non-salaried members. The board would have had the power to administer the existing toll highway system but not to extend it.

The new board also would have had the authority to lease all or part of the toll superhighway system to the state for up to 40 years.

• **Other features**—The bill also would:

• Repeal present enabling acts authorizing construction of Gettysburg, Sharon-Stroudsburg, Southwestern, Northwestern and Chester extensions of the turnpike.

• Give the proposed Turnpike Board the power to borrow money at interest rates up to 6% a year for interim financing.

• Give the board the responsibility of reconstruction under contracts let through competitive bidding.

The governor recommended that the turnpike system be freed of tolls as soon as possible, expressing the belief that the new federal highway program would make toll highways "obsolete and unworkable."

• **'Gas' tax reduced**—The legislature also reduced the state's gasoline tax from six cents a gallon to five cents a gallon. The tax had been raised one cent in September 1955, as an "emergency" levy for the repair of flood damage in the floods of that year. It was scheduled to expire in September. The reduction will result in a $60 million revenue drop.

The lawmakers also authorized the General State Authority—the borrowing and building agency of the state—to expand its borrowing by $50 million.

The bill did not earmark any of the additional money, except for $1 million for land purchases for new building at state teachers' colleges. The authority's new maximum financing power for construction is $480 million.

Also passed was a bill requiring the state to reimburse public utility companies for the cost of moving their facilities from rights-of-way in the federal interstate highway system.

• **Measures defeated**—The legislature rejected measures to:

• Require the registration of union welfare and pension funds with the State Insurance Commissioner.

• Boost the state-aid ceiling for school construction to $925 million for the 1957 to 1958 school year.

Costs Rise Again

ENR indexes set record; wages up in 8 key cities

ENGINEERING NEWS-RECORD's Building and Construction Cost Indexes have both hit new records, principally because of wage increases for building tradesmen in eight key cities.

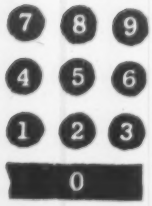
ENR's Construction Cost Index moved up nearly three points in a month. The new value is 724.15 (based on 1913=100). The Building Cost Index advanced about 2½ points to a new high of 506.62, also based on 1913=100.

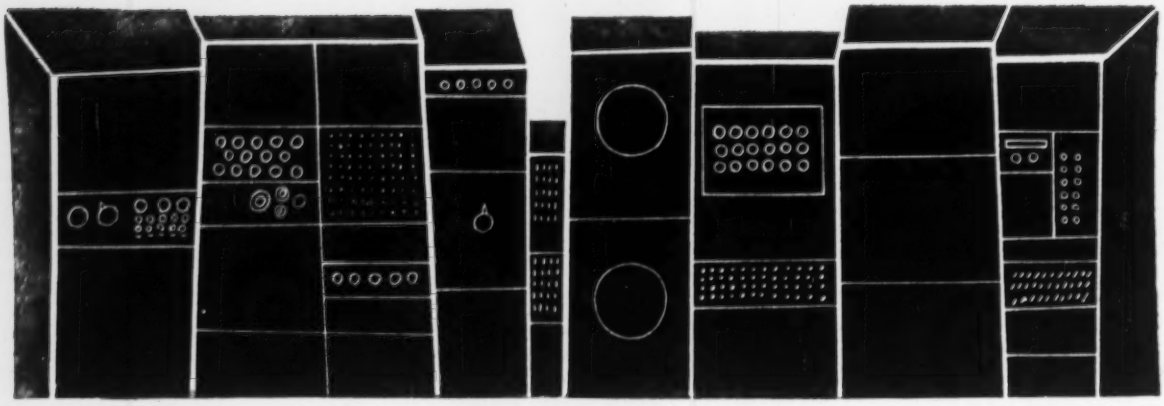
Wage increases ranged from 10 cents to 32.5 cents an hour. Rates for common laborers on building and heavy construction went up in two cities: Cincinnati, 15 cents; and Baltimore, 10 cents.

Skilled trades won wage increases in eight cities: bricklayers, 25 cents an hour more in Baltimore, 20 cents in Chicago and 15 cents in Cincinnati; carpenters, 22.5 cents in Los Angeles, 16 cents in Detroit, 15 cents in Cincinnati and San Francisco, and 10 cents in Baltimore; structural ironworkers, 32.5 cents in Chicago, 15 cents in Cincinnati and 10 cents in Kansas.

(B&F continued on page 79)

simple as a desk calculator...





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Congress Acts to Aid Housing

House adopts compromise measure lowering down payments, increasing Fannie Mae's secondary market

Reinforced government support for homebuilding is assured by the housing bill that House and Senate conferees agreed upon last week. The House immediately accepted the conference compromise, and the Senate is expected to concur next week.

More money for mortgages and easier terms for home buyers are the two main bolsters of housing construction in the bill that will soon become law. In addition, the legislation authorizes a substantial increase in federal grants for urban renewal and in loan funds for college housing.

Despite the aid given to several key elements of the federal housing program, experts predict no significant rise in housing activity this year, at least, from the new and more liberal law.

Reason: The basic underlying cause of the present level of housing starts is the shortage of mortgage credit—and there's nothing in the law that attacks this problem. The Administration's basic position is still that inflation is the primary enemy of economic stability, and top officials are committed to keeping the tightest controls on credit in order to keep the boom under control.

Officials admit that housing is taking a rap, but they point to the fact that construction volume, overall, is at a record high.

Reconciling minor differences in two versions of the housing bill as previously passed by the House and Senate, the conferees came to agreement on:

(1) $715 million of additional authority for the Federal National Mortgage Assn. (Fannie Mae) to purchase FHA and VA mortgages.

(2) $600 million more of federal funds for Fannie Mae's special assistance programs, including military housing.

(3) Lower downpayment requirements for purchase of homes with FHA-insured mortgages.

In easing downpayments, the conferees accepted the House formula that lowers requirements to 3% of the first $10,000 of appraised value, 15% of the next $6,000, and 30% of the excess above $16,000. Present law requires 5% on the first $9,000 and 25% on the amount over this figure. There is no change in the maximum mortgage that FHA may insure, which remains at $20,000.

Fannie Mae authority to borrow money for purchase of FHA and VA mortgages is increased by $715 million. Of that amount, $65 million will come from sale of preferred stock to the Treasury and $650 million from sale of debentures in the open market. However, the Treasury is authorized to supply all or any part of the $650 million that is not raised by sale of obligations to private investors.

Of the total of $600 million in government funds added to Fannie Mae's special assistance authority, the conferees approved an increase of $250 million for advance commitments and purchase of mortgages on Capehart military family housing. This amount is sufficient to finance some 16,000 family units, or about two-thirds of the annual volume at the current rate of awards. The conference agreed, however, to drop Senate language that would have allowed Fannie Mae to make construction loans, also, on Capehart projects.

For general use in special assistance to housing associated with urban renewal, disaster emergencies and the like, the bill provides a similar increase of $250 million. And another earmarked increase of $100 million is given Fannie Mae for financing mortgages on cooperative housing projects.

Urban renewal grants to cities go up $350 million under terms of the bill—a generous compromise between $250 million for one year approved by the House and $500 million for two years voted by the Senate. The $350 million will take care of a good share of more than $600 million of additional applications that the cities say will reach Washington within the next 12 months.

College housing loans are increased $175 million in accordance with Senate language, which makes no change in the interest rate formula. Currently, the rate is 2⅞%. The House version would have tied the interest charge to the rate on government bonds. That would mean stepping up the college loan rate today to about 3¼%.

New Toll Bridges Studied For North Carolina Coast

The prospect of construction of toll bridges across the Cape Fear and Alligator Rivers on the North Carolina sea coast has been revised by Gov. Luther H. Hodges, who says funds are available to employ an outside agency to make traffic surveys to determine whether building the structures would be justified.

According to A. H. Graham, chairman of the State Highway Commission, the bridge over Cape Fear River, near Wilmington, would cost from $12 to $14 million. The Alligator River structure, replacing a free ferry from Sandy Point to East Lake, would cost between $4 and $4½ million.

Both of the structures would be toll bridges under the present plan, a major departure from previous state policy. There now are no toll bridges, roads or ferries in operation on the state's highways.

No Flood Insurance

Plan goes into moth balls as Congress refuses money

The proposed federal flood insurance program will be put in "moth balls" until the next session of Congress and no requests will be made to Congress for funds to carry out further studies on the program, Housing and Home Finance Administrator Albert M. Cole announced last week.

Praising studies and plans developed by Commissioner Frank J. Meistrell as sound, Mr. Cole said that "in view of the decision of the Congress not to appropriate funds for an initial operation of these plans this year, we do not believe that a re-study of the detailed studies already made would be a profitable expenditure of additional public funds.

"We do, however, believe that this is a needed and important program and that the plans developed this past year offer a sound basis for trying it out. We intend to ask the Congress again next year to reconsider its decision and to provide funds necessary to give these plans a fair trail."

Legislation authorizing federal assistance to insure individuals, businesses and public bodies against damage by floods and tidal waters was enacted in the Federal Flood Insurance Act of 1956 last August. The Federal Flood Indemnity Administration was established last October as part of the Housing and Home Finance Agency. However, Congress refused to appropriate $14 million needed to get the program started.

Because of this Congressional decision, Mr. Cole said that the recently created Federal Flood Insurance Administration will close its doors, at least temporarily, and the operating program that has been developed will be held on file for presentation again to Congress next year.

THERE'S A "Euc" SCRAPER MATCHED

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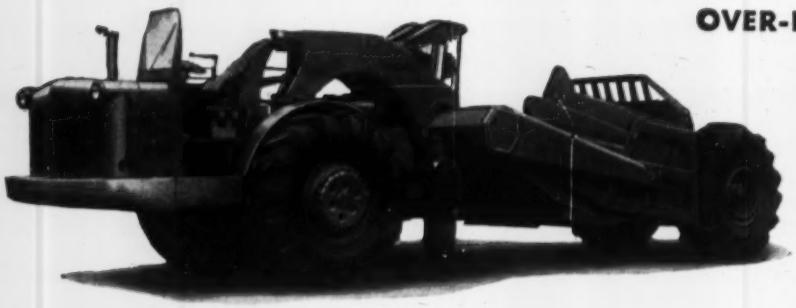
Euclid offers you the most complete line of self-powered scrapers in the industry—and they're all job-proved to give you more work-ability and low cost yardage. No matter what your job may be—from small clean-up or grading work to big yardage projects—there's a size and type that meets your requirements.

SIX-WHEEL SCRAPERS

These models provide maximum stability for long, high speed hauls. They have capacities of 12, 18 and 24 yds. struck . . . are powered by engines of 200 to 335 h.p. and haul heaped loads of 16, 25 and 32 yds. at speeds up to 30 mph.

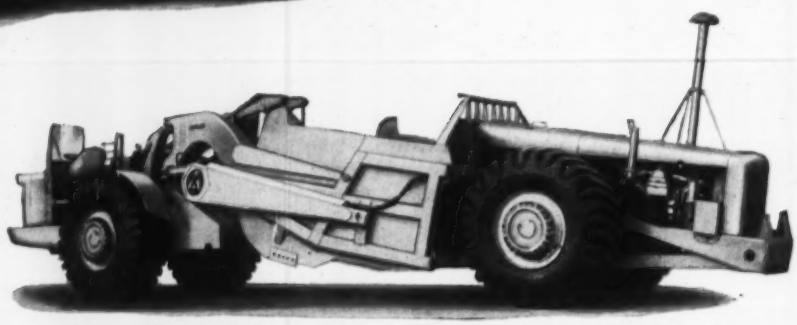


OVER-HUNG ENGINE MODELS

Payload capacities of these "Eucs" are 7, 12 and 18 yds. struck . . . 9, 16 and 25 yds. heaped. Over-hung engine design of tractors provides excellent maneuverability and ease of handling in difficult work . . . engines are 143, 300 and 335 h.p.

TWIN-POWER SCRAPER

With a total of 518 h.p., this Euclid has a struck capacity of 24 yds. . . . 32 yds. heaped. Two engines, each having a separate Torqmatic Drive, enable this "Euc" to work independent of other equipment and move more yards at lowest cost on any scraper job.



Your Euclid dealer can supply performance and cost data on the Euclid Scrapers best suited to your operations. Have him show you why Euclids are your best investment.

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S-7 Model S-7 is equipped with 143 h.p. engine . . . 18.00 x 25 tires . . . 4-speed Torqmatic Drive . . . full hydraulic 90° steering. Capacity is 7 cu. yds. struck and 9 yds. heaped at 1:1 slope. Optional tires are 21.00 x 25.

S-12 Powered by a 218 h.p. engine, the Euclid S-12 Scraper has a 5-speed transmission . . . 24.00 x 25 tires . . . full hydraulic 90° steering. Struck capacity is 12 cu. yds. . . . at 1:1 heap, 16 yds.

S-18 This Model S-18 has a 300 h.p. engine with 4-speed Torqmatic Drive. Struck capacity is 18 cu. yds. . . . 25 yds. at 1:1 heap. Tires are 27.00 x 33 with 33.50 x 33 optional . . . full hydraulic 90° steering.

FDT This 4-wheel tractor model has a struck capacity of 12 cu. yds. . . . 16 yds. heaped . . . and is available with 200 or 218 h.p. engine and 5-speed transmission. Tire sizes are 12.00x25 front and 21.00x25 on drive and scraper wheels with 24.00x25 optional.

SS-18 The Model SS-18 has a 300 h.p. engine and 3-speed Torqmatic Drive. Capacity is 18 cu. yds. struck and 25 yds. heaped. Front tires are 14.00 x 25 . . . 24.00 x 25 tires on drive and scraper wheels with 29.5 x 25 optional . . . hydraulic booster steering.

SS-24 A 300 or 335 h.p. engine with Allison 4-speed transmission and converter lock-up powers the Model SS-24. Struck capacity is 24 cu. yds. . . . 32 yds. heaped. Front tires are 14.00 x 25 . . . drive and scraper tires are 27.00 x 33 with 33.50 x 33 optional for maximum traction and flotation.

TS-24 The Model TS-24 has a 300 h.p. engine for the tractor and a 218 h.p. engine for the scraper . . . each with a separate Torqmatic Drive. Heaped capacity at 1:1 is 32 cu. yds. . . . 24 yds. struck. Full 90° hydraulic steering . . . 27.00 x 33 tires with 33.50 x 33 optional.

"Euc" Scrapers have hydraulic lever action, 4 section adjustable and reversible cutting edges, unequalled accessibility and other cost-cutting advantages. Check the complete Euclid line before you decide on any scraper equipment.

Dozing—But Never Dozing Off. Moving earth for new Interchange north of Washington, dozers average 3000-4000 hrs. before overhaul using Cities Service C-300 Motor Oil!

Greene in Name Only. Veteran construction man Ralph Greene is one of Washington's largest earth movers. He refuses to baby his trucks. With Cities Service lubricants they can take it!

At work on new Interchange: Greene & Dyer, Inc., Washington, D. C.

Trucks go 7000 hrs. without overhaul—Shovel chalks up 8500 hrs.

Big earth mover strikes paydirt with Cities Service Products

In the past year, Greene & Dyer, Inc. has moved 1½ million yards of earth in building an Interchange for the new road system north of Washington, D. C.

To do it, President Ralph Greene has kept his trucks, dozers and shovels running constantly under grueling mud and dust conditions. For, as he says: "We're in business to move dirt, not to baby trucks."

Nevertheless, Greene's equipment is rolling up one record after another, using Cities Service C-300 Motor Oil and Cities Service fuels and greases.

Dozers are getting 3000-4000 hours before overhaul. Trucks are rolling up 65,000 miles—or about 7000 hours each. And one shovel has gone 8500 hours with no overhaul yet needed.

Says Greene: "That's proof enough for me that Cities Service products are the best I can use. I'd recommend Cities Service to anyone whose work demands fuels and lubricants that can take it."

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

Wage Talks Grow Cost Conscious

Industry skates around threat of a major strike in New York City; Jersey builders suggest wage freeze

New York City's construction industry eased out of the threat of a major strike last weekend, as wage talks in the rest of the nation remained fairly tense. Out of the negotiations came evidence of a growing concern over rising building costs.

Among the week's more significant developments were these:

- On the West Coast, long-term agreements scored new gains.
- In the Midwest, a group of homebuilders continued the search for an effective homebuilders' voice in collective bargaining.
- On the East Coast, a plea for a voluntary freeze to hold down building costs was renewed.
- In the South, a plumbers local welcomed a cut in overtime pay to increase job opportunities.
- In most cases, hourly wage increases, both present and deferred, were 15 cents or more.

• New York—In a series of touch-and-go weekend negotiations in New York City, contracts for 20 of the building trades expired June 30 with only two renewals but with enough tentative settlements to avert a major strike. Although glaziers and composition roofers, whose contracts may now be revised, had settled earlier for a 50 cent wage boost under three-year contracts, the break came at midnight Sunday when six trades in the Cement Alliance —operating engineers, carpenters, excavating masons, metal lathers, cement masons and concrete workers—tentatively agreed to what may be the pattern for the remaining trades—three-year contracts granting an overall basic wage increase of 65 cents. Although steamfitters and sheet metal workers struck Monday, indications were that boilermakers, plumbers, bricklayer helpers and asbestos workers would continue work pending further negotiations.

Throughout the wage talks, which opened in March, contractor resistance to wage demands was generally firm and largely keyed to minimizing inflationary rises in building costs. In this endeavor, the Building Trades Employers Association, which coordinates the bargaining of its member trade groups, found a new ally in 27 owner-management firms that recently formed the Investing Builders Association, Inc., now affiliated with the BTEA. Members of IBA annually sponsor over $200 million in commercial building construction and, in effect have now added the "owner's" voice to current efforts to hold down building costs.

• General picture—Outside of New York, collective bargaining results, in terms of basic rate increases, have been fairly uniform. This is what some of the new contracts look like:

- Miami, Fla., lathers—3 years—52 cents.
- Rhode Island cement finishers—3 years—50 cents.
- California pipeline workers—5 years—fixed increase of 50 cents over the first two years.
- Southern California cement masons—5 years—47½ cents over the first two years.
- Southern California laborers—5 years—38 cents over the first two years.
- Poughkeepsie, N. Y., bricklayers and laborers—2 years—35 cents.
- Dallas, plumbers—2 years—35 cents.

• Homebuilders—Amid these developments, the Chicago Metropolitan Home Builders Association was forced to capitulate last week to wage settlements reached by general contractors.

But like the homebuilders in Sacramento (ENR June 20, p. 152), they have turned to the National Labor Relations Board for relief. A petition for a representation election is pending.

Homebuilders' complaint is that with few exceptions their wage rates are set in union-general contractor negotiations in which they are not represented. At a mid-winter meeting of the National Association of Home Builders (ENR Mar. 7, p. 148) it was suggested that the solution lies in joint bargaining rather than separate negotiations.

• Wage freeze—Meanwhile, the price squeeze which troubles homebuilders was tossed around in another aspect by general building contractors in the East.

A spokesman for the Building Contractors Association of New Jersey, echoing the same concern expressed by President Eisenhower earlier in the week (see page 86), made these observations last Friday:

- The AFL-CIO Building and Construction Trades Department should recommend a temporary halt in wage demands to all its affiliates.
- If the unions do not take the initiative, they may be inviting management to ask the federal government to step in and put a lid on wages.

The suggestions were made by Paul Brienza, managing director of BCA, at the mid-year meeting of the Building Industry Employers of New York State.

Mr. Brienza said his remarks were directed, not against labor, but at the mutual responsibility of labor and management to the public. Object, he stated, is "to protect the prosperity that this industry now enjoys."

• A union move—But concern over the effect of wages on building activity hasn't been confined to management.

Last month, for example, plumbers and steamfitters Local 100 in Dallas agreed to reduce their overtime pay from doubletime to time-and-a-half for work after 4:30 pm.

Union members expressed the hope that the action would increase the number of night-time jobs available in the downtown Dallas area.

Anti-Union Ordinance Held Unconstitutional

Efforts to slow down the trade union movement in the South were rebuffed earlier this month by a federal court ruling holding unconstitutional a Russellville, Ga., city ordinance that requires the licensing of union organizers.

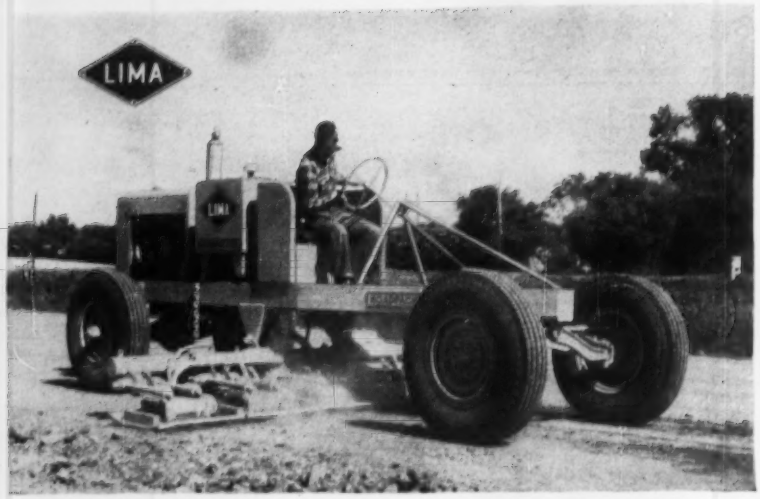
The ordinance was passed last December. Unlike many of its counterparts, it imposes a modest license fee of only $25. A similar ordinance in Baxley, Ga., calls for a $2,000 annual license fee, plus $500 for each union member obtained.

Effect of the ruling handed down by the U. S. District Court for the Western District is to prevent Russellville from enforcing the ordinance.

Half the States Now Have Merged Labor Federations

The AFL-CIO continues to demonstrate the strength and appeal of labor unity as AFL-CIO mergers at the state level reach the half-way point. Last month, Mississippi scored the 23rd state merger and Connecticut the 24th.

Under the AFL-CIO constitution, state and local central bodies of the old AFL and CIO are given until December of this year to complete their mergers. Major difficulties encountered have been a reluctance on the part of some



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. . . faster high-density compaction at lower cost

The penetrating vibration of six heavy vibrating shoes compacts macadam bases and gravel sub-bases to specified densities.

Course aggregate for macadam bases up to 12" thick can be spread in a single layer, then uniformly compacted to final density over a 13'1" width with the LIMA Roadpacker.

Single spread, which is permissible only with the vibratory method, reduces material handling by one-half or more—it eliminates backtracking of spreading equipment and contour shaping is needed only once.

The action of the vibration "runs in" screenings to full depth of macadam with only three operations. Much of the labor formerly required to spread, broom and roll is eliminated.

The versatile LIMA Roadpacker performs with equal efficiency on both full-width and widening jobs.

Here's how the LIMA Roadpacker speeds up paving operations.

- Drives to job at 30 MPH.
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- Covers a 13-ft., 1-in. width, one half of a two lane road.
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- Low maintenance—all working parts are completely enclosed, can even operate under water or dirt. Shoes are driven hydraulically and are pressure-lubricated.

A fact-filled 4-page folder tells how the new LIMA Roadpacker will help you make more paving profits. Write for your copy today.

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of the building trades to enter a merger until a satisfactory solution has been found to jurisdictional problems in relation to CIO affiliates and the problem of selecting officers for the merged units.

Known as the Mississippi AFL-CIO Labor Council, the Mississippi federation has a membership of over 30,000. Ray Bryant, of the AFL firefighters union, is president.

The Connecticut State Labor Council, AFL-CIO, with nearly 200,000 members, is headed by a CIO official—Mitchel Sviridoff, a member of the United Auto Workers, who was president of the Connecticut Industrial Union Council.

According to AFL-CIO President George Meany, mergers in the remaining states by December are mandatory and will be effected by the parent federation if not accomplished voluntarily at the local level.

Court Puts Restriction On Peaceful Picketing

The proposition that peaceful picketing is a form of free speech protected by the Constitution was torpedoed by the U. S. Supreme Court last month. In a five to three decision, the high court ruled that peaceful picketing may be banned by a state if the "conduct and purpose" of the picketing is directed against a valid public policy of the state.

The court held that three unions—teamsters, operating engineers and laborers—were not denied freedom of speech or due process of law when the State of Wisconsin enjoined them from peacefully picketing a gravel pit they were attempting to organize.

To Justice Douglas, who dissented with Mr. Warren and Mr. Black, the majority decision represents a "surrender" of freedom of speech. He regarded the union activity—peaceful picketing with signs that read "The Men on This Job Are Not 100% Affiliated With the AFL"—as within the area of free discussion that is protected by the Constitution.

But Mr. Frankfurter, who spoke for the majority, said the fact that states cannot "enact blanket prohibitions against picketing" does not prevent them from banning picketing that violates public policy. Under Wisconsin law, he stated, an employer cannot be coerced into putting pressure on his employees to join a union. The Wisconsin Supreme Court had drawn the inference that the union activity in this case added up to this type of coercion and the U. S. Supreme Court agreed.

(*Labor continued on page 86*)

New York State Thruway Uses ALLIED Jet Seal

Equipment for laying Allied JET SEAL comes in one compact unit that assures proper installation.

Allied JET SEAL is contained for maximum protection, quick identification and easy mixing.

The New York State Thruway is one of the most modern and up-to-date traffic arteries in the world. It now stretches 427 miles from New York City to Buffalo and is being extended five ways —to Erie, to Niagara Falls, to Massachusetts, to Connecticut and New Jersey.

To protect the tremendous investment in this beautiful highway, the Thruway Authority seeks only the best materials for construction and maintenance. Here, Allied JET SEAL has won distinction as the preferred sealant for protecting the more than 500 bridges on the super-highway.

Allied JET SEAL is outstanding for its extreme ruggedness, superior adhesion, cohesion and low temperature ductility. Allied JET SEAL has no cold flow tendencies even above 300°. It is easily applied, sets up quickly, and is ready for traffic with minimum delay. The Thruway Authority believes that its greater life expectancy makes it more economical, in the long run, than the less effective sealants it is destined to replace.

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New Market, N. J.—Crawford, Ontario (Canada)

Wages and Inflation

President urges caution; labor, an investigation

Last week, as the construction industry was still deep in its 1957 collective bargaining negotiations, President Eisenhower again cited the "wage-price spiral" as an inflationary factor. He rejected a return to government control of wages and prices and placed the burden of moderation on labor and management. But he offered no support to labor in its demand for a full-scale Congressional investigation of the issue.

At his June 27 news conference, the President made these observations:

- Some of the current inflationary tendencies "undoubtedly" come from the wage-price spiral.
- It is difficult to tell where "justice" lies in either industry or labor demands.
- Exercise of "statesmanship" by both management and labor is essential to the nation's welfare.
- Industry should "take under the most serious consideration any thought of price increase."
- Labor should ask only for wage increases that "conform roughly to the increase in productivity of the individual" or that "eliminate demonstrable injustices existing in particular areas."

Meanwhile, as organized labor continued its pressure for a Congressional probe into the relationship between wages and prices, the AFL-CIO's Industrial Union Department called attention to "a new surge of price increases" despite current "record industry profits." U. S. Steel Corp. raised its prices $6 a ton, effective this week, to offset rising wage costs. And the Tennessee State Council of Machinists has asked its international union to disseminate Congressional records on the resolution to investigate inflation, suggesting that a vote against the probe is a vote against labor.

No-Raiding Agreement

Progress under AFL-CIO pact called satisfactory

The AFL-CIO No-Raiding Agreement, which is one of the cornerstones of the AFL-CIO merger, has accomplished "at least as much" as its authors hoped for.

That is the report last month of AFL-CIO Secretary-Treasurer William F. Schnitzler, who said that only 122 cases have had to be processed under the agreement since it went into effect on July 9, 1954. Of these, 53 have been handled since the merger. Mr. Schnitzler called the record "highly satisfactory".

The agreement was conceived as an essential step to the achievement of labor unity and is designed to eliminate the raiding by one union on the established jurisdiction of another. It bans all attempts by AFL and CIO affiliates to organize or represent employees as to whom an affiliate of the other organization has been certified as collective bargaining representative. It is binding only on those unions that have signed it—now 103 in all out of a possible 138.

Among the unions that have refused to participate in the agreement are seven from the building trades.

The agreement, which has been continued in effect by the AFL-CIO, provides for the settlement of jurisdictional disputes by negotiations between disputing unions, and, failing that, referral of disputes to an impartial umpire, who is presently David L. Cole. According to Mr. Schnitzler, only 29 cases have been sent to Mr. Cole.

Typical of situations the agreement seeks to prevent is a current effort by sheet metal workers to gain recognition at Ohio's Burt Manufacturing Co., whose employees are represented by the steelworkers union. Had the sheet metal workers signed the agreement, the current boycott of Burt ventilators would have been prohibited.

Labor Briefs . . .

- **Clerical workers**—The St. Lawrence Contractors Association in Massena, N. Y., soon will be bargaining with clerical workers on construction projects along the St. Lawrence Seaway. By a vote of 87 to 33, time-keepers, clerks, typists and other clerical workers at nine locations voted for representation by the AFL-CIO's Office Employees International Union.
- **No-man's land**—Thurman Arnold, former Assistant U. S. Attorney General, last week said Congress should do something about the "No-man's land" in which some employers with labor disputes can't seek relief from either the NLRB or state courts because of the combination of jurisdictional standards and federal supremacy.
- **Merger**—AFL and CIO forces in New York moved closer to a state labor merger last week after accepting a compromise proposal made by AFL-CIO President George Meany for allocation of federation offices between the two groups. The four principle offices will be divided equally between AFL and CIO members, with the presidency going to an AFL man.

OFFICIAL PROPOSALS

Bids: August 2, 1957

Sault Ste. Marie Bridge Company
Construction of Railroad Lift Bridge

Tenders are invited by the Sault Ste. Marie Bridge Company for the construction of a 370 foot railroad lift bridge over the south ship canal at Sault Ste. Marie, Michigan. Tenders must be delivered to the office of the Chief Engineer of the Soo Line Railroad Company, Minneapolis, Minnesota not later than 10 A.M., D.S.T., August 2, 1957.

Plans and specifications are on file for inspection at the Soo Line Office in Minneapolis and the Corps of Engineers Offices in Detroit and Sault Ste. Marie. Copies of plans and specifications will be furnished at a fee of $30.00.

Bids: July 22, 1957

Contract O & M 415

CLEANING, REFINISHING, OXIDIZING AND MAINTAINING BRONZE PORT AUTHORITY BUILDING AND NEW YORK UNION MOTOR TRUCK TERMINAL
THE PORT OF NEW YORK AUTHORITY
PROPOSAL NO. 1085

Sealed proposals for furnishing all labor, material and equipment necessary for cleaning, refinishing, oxidizing and maintaining interior and exterior bronze at the Port Authority Building, 111 Eighth Avenue, New York City, N. Y., and the New York Union Motor Truck Terminal, 325 Spring Street, New York City, N. Y., will be received at the office of the Director of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, N. Y., until 11:00 A.M. (D.S.T.), on Monday, July 22, 1957, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase and Administrative Services.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, July 4, 1957

U. S. Government

Sealed bids will be received in the office of the Engineering and Construction Director, Panama Canal Company, Balboa Heights, Canal Zone until 10:00 A.M., E.S.T., August 21, 1957 and at that time publicly opened for the following work: Furnishing all plant, labor, materials, equipment and services and performing all work required to replace switchgear in the Miraflores substation. This work consists of demolition of existing concrete switch cells, bus structure and instrument transformer compartments; furnishing and installation of 23 units of 2.4 KV and 12 units of 12 KV metal clad switchgear, a five (5) panel duplex control board, two (2) 5000 KVA, 3 phase, 60 cycle transformers and one (1) 10,000 KVA, 3 phase, 60 cycle power transformer. It also consists of removal of 25 cycle transformers from the substation, alterations to switch structure in high tension room, the installation of nine (9) 44 KV oil circuit breakers and the relocation of approximately 1000 feet of 44 KV transmission line. Specifications and drawings are available for examinations at the office of Chief of Procurement, Panama Canal Company, 21 West Street, New York 6, New York and may be obtained upon payment of a deposit of $50.00 which is refunded if data are returned within 40 calendar days after bid opening. For further information contact this office, 21 West Street, New York 6, N. Y. Telephone Bowling Green 9-5380, extension 56.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4936) will be received at Cody, Wyoming, until August 8, 1957, for furnishing labor and materials for Left Abutment Outlet Works and Rehabilitation of Penstock Intakes, Shoshone Project, Wyoming. Location near Cody, Wyoming. Principal items are 4,900 cu. yds. excavation; 1,200 cu. yds. concrete; and other work. The work is divided into 2 schedules. Completion time 700 days. For particulars, address Bureau of Reclamation, P. O. Box 839, Cody, Wyoming; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.10 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, P.O. Box 12, New York 36, N. Y.

Bids: July 23, 1957

Contract PN-460.001

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
PAVING AND UTILITIES
SOUTH OF BUILDING NO. 152

Sealed proposals for the construction of pavement and the furnishing and installation of utilities in an area south of Building No. 152 at Port Newark will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1160, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, July 23, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 4, 1957

Bids: July 18th, 1957

Reconstructing and Repairing Champlain Canal

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A. M. DST on July 18, 1957 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 57-8 for Reconstructing Taintor Gate Counterweights of Dam No. 1 and Repairing East Wall of Lock No. 1, Champlain Canal, Town of Half Moon, Saratoga County and Town of Schaghticoke, Rensselaer County, New York. Engineer's Estimate for M-57-8 is $91,200.00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-8 may be examined and obtained at the office of Mr. G. L. Nickerson, District Engineer, 343 Broadway, Albany 1, New York.

The deposit for Plans and Proposal Forms for Contract M 57-8 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 57-8 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $5,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: July 26, 1957

Construction of Sanitary Sewers

Sealed bids will be received until 11:00 A.M., EST, on July 26, 1957, in the office of the City Commission of Fort Lauderdale, Florida, for the construction of sanitary sewers in Area "F" consisting of approximately 54,000 linear feet of gravity sewers, 69,000 linear feet of air and force mains, 22 pneumatic ejector lift stations and appurtenances. This contract to be known as "Contract A", Improvement 1000.

Bidding blanks may be obtained from the office of the City Engineer. Plans, specifications, and contract documents are on file in the office of the City Engineer.

A deposit of $50.00 for plans and specifications, and of $35.00 for each additional set of plans or specifications, will be required. All deposits for plans and specifications will be refunded upon their return in good condition within 10 days of the opening of bids.

A certified check, cashier's check or bank officer's check, for 2% of the total amount of the bid, made payable to City of Fort Lauderdale, Florida, shall accompany each proposal as evidence of good faith and responsibility of the Bidder. This check shall be retained by the payee as liquidated damages should the Bidder refuse or fail to enter into a contract with the payee for the execution of the work embraced in the Proposal, in the event the Proposal of the Bidder is accepted.

The City Commission reserves the right to reject any or all bids.

William J. Veeder
City Manager

Bids: July 18, 1957

Cleaning and Painting Bridges

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T., on July 18, 1957 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 57-11 for Cleaning and Painting Twelve Bridges over the Erie Canal in Orleans County, New York. Engineer's Estimate for M 57-11 is $28,500.00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, Gov. A. E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, New York.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-11 may be examined and obtained at the office of Mr. B. F. Perry, District Engineer, Barge Canal Terminal, Rochester, New York.

The deposit for Plans and Proposal Forms for Contract M 57-11 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 57-11 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $1,500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: August 14, 1957

Sewage Treatment Plant

NOTICE TO BIDDERS
ADVERTISEMENT
COUNTY OF WESTCHESTER,
NEW YORK

CONTRACT 878—STRUCTURES AND EQUIPMENT
CONTRACT 878P—PLUMBING
CONTRACT 878H—HEATING AND VENTILATING
CONTRACT 878E—ELECTRICAL
FOR: SEWAGE TREATMENT PLANT YONKERS SEWER PROJECT LOCATED IN THE CITY OF YONKERS, WESTCHESTER COUNTY, NEW YORK

Sealed bids or proposals will be received in Room 508, County Office Building, White Plains, New York, until 11:00 A.M., Eastern Daylight Saving Time, August 14, 1957, immediately after which the bids will be publicly opened and read aloud in Room 808 of said building.

The work under these Contracts comprises the construction of a Sewage Treatment Plant, connecting sewers, screening and diversion facilities, and appurtenant work.

The site of the work is located in the City of Yonkers and is bounded on the South by the City of New York limits and on the East by the New York Central Railroad Company Property.

The time for completion of the work is 550 calendar days.

All contract documents may be seen in Room 508, County Office Building. Bidders may procure plans and specifications for the work proposed upon a cash deposit of $100.00 which deposit will be refunded provided that all plans and copies of specifications are returned in good condition within thirty days after the award of the contract or rejection of bids.

All bids must be accompanied by a certified check payable to the County of Westchester, New York, or by a bid bond in amounts not less than the following:

Contract 878 —$250,000
Contract 878E—$ 25,000
Contract 878H—$ 10,000
Contract 878P—$ 8,500

Bids must also be accompanied by a consent of surety in the form included in the Contract Documents.

The County of Westchester reserves the right to waive any informalities in the bids or to reject any and all bids.

COUNTY OF WESTCHESTER
DEPARTMENT OF PUBLIC WORKS
BY: JAMES C. HARDING
COMMISSIONER

DATED: White Plains, New York
July 5, 1957

OFFICIAL PROPOSALS

Bids: July 22, 1957

The Charlotteburg Reservoir Project

OFFICE OF THE DIRECTOR OF THE DEPARTMENT OF PUBLIC WORKS OF THE CITY OF NEWARK, NEW JERSEY
City Hall, Newark, N. J.
Date June 19, 1957

Job No. 4161 Division of Water Supply

Sealed proposals will be received at 10:00 A.M. Eastern Daylight Saving Time on July 22, 1957 by the Director of the Department of Public Works, in Room 312, City Hall, Newark, New Jersey, and then and there at 10:00 A.M. publicly opened and read for the following work which is a part of the Charlotteburg Reservoir Project:

CONSTRUCTING THE PEQUANNOCK AQUEDUCT EXTENSION, SCREEN CHAMBER, AND ECHO LAKE PIPE LINE, CONTRACT CRP-1, GENERAL CONSTRUCTION.

The work under this Contract includes, but is not limited to the following:

(a) Pequannock Aqueduct Extension: The Contractor will be required to furnish, lay and test approximately 2 miles of pressure pipe consisting of 48 inch I.D. steel and 42, 54, and 72 I.D. reinforced concrete pipe, including air relief and other valves, blow-offs and other appurtenances; and construct a reinforced concrete channel, access manholes, enclosing concrete structures, and do other miscellaneous work.

(b) Screen Chamber: The Contractor will be required to construct a reinforced concrete screen chamber substructure approximately 40 feet by 70 feet in plan. The Screen Chamber Superstructure, including structural steel, heating and electrical work, will be constructed under other contracts. The substructure will extend approximately 20 feet below grade and will be divided into compartments consisting of a valve chamber, duplicate blowdown chambers, duplicate screen wells, an overflow effluent well, a screen influent well and a screen effluent well.

(c) Echo Lake Pipeline: This pipeline will be approximately .55 miles long and will generally follow the abandoned roadbed of the Macopin Lake Branch of the New York, Susquehanna & Western Railroad from its intersection with the Echo Lake outlet channel to the future Charlotteburg Reservoir.

Approximately 800 feet of 36 inch concrete pipe for this line will be furnished by the City but will be laid and tested by the Contractor. The remainder of the line, consisting of 24 inch I.D. pressure pipe and 24 inch culvert pipe will be furnished, laid and tested by the Contractor. The Contractor will also be required to furnish and install appurtenances, construct manholes and enclosing concrete structures, and do other miscellaneous work.

The Drawings, Specifications and Information to Bidders, and the Proposal, Contract and Bond forms are on file and may be seen at the office of the Division Engineer, Division of Water Supply, Department of Public Works, Room 101, City Hall Annex, Newark and at the office of Parsons, Brinckerhoff, Hall & Macdonald, Engineers, 51 Broadway, New York, New York. Copies may be obtained at the office of the Division Engineer or at the office of Parsons, Brinckerhoff, Hall & Macdonald upon deposit of twenty-five dollars, which sum will be refunded upon return of the Drawings and Specifications in good condition.

An Agreement of Surety signed by a Surety Company authorized to do business in New Jersey shall accompany each proposal for execution of contract on award thereof. Said Agreement of Surety shall be in conformity with the requirements specified in Instructions and Information for Bidders.

The contract will be awarded to the lowest responsible bidder. The City reserves the right to reject any and all bids or waive informalities therein.

All proposals are subject to the requirements of all laws and City ordinances affecting same. The bidder's attention is called to Section 2.58 of the City Administrative Code.

By direction of the Director of the Department of Public Works of The City of Newark.

George W. Andress
Director, Department of Public Works

NOTICE TO ADVERTISERS

The July 18 issue will close for press on July 10.

OFFICIAL PROPOSALS

Bids: July 18, 1957

Cleaning and Painting Bridges

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M. D.S.T. on July 18, 1957 by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 57-9 for Cleaning and Painting Bridges over the Erie Canal in Niagara and Erie Counties, New York.
Engineer's Estimate for M 57-9 is $23,-200.00.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-9 may be examined and obtained at the office of Mr. E. G. H. Youngmann, District Engineer, 65 Court St., Buffalo 2, New York.

The deposit for Plans and Proposal Forms for Contract M 57-9 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Proposals for M 57-9 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" in the amount of $1,300.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: July 18, 1957

Soil Explorations

NOTICE TO CONTRACTORS.

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Advanced Eastern Standard Time, on July 18, 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATION AT VARIOUS SITES ON THROGS NECK EXPRESSWAY, INTERSTATE ROUTE 513, PROJECT I-1112(2), BRONX COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. FA-SM-103.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.
(b) Mr. M. E. Goul, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, New York.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit. The Engineer's Estimate of cost for this work is $14,745.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: August 15, 1957

Power Authority of the State of New York
Niagara Power Project

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY
OF
167,000 KVA GENERATORS
FOR
LEWISTON POWER PLANT
SPECIFICATIONS NO. PA-N-25002
NIAGARA CONTRACT NO. NP4

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. Model City, New York of 167,000 KVA Generators for the Lewiston Power Plant in Lewiston, Niagara County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 15th day of August, 1957, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be entertained for 13, 7 or 6 generators and associated equipment in accordance with the bidding schedules.

Delivery of generator parts will be required beginning on or before May 1, 1959.

Bids will not be restricted to American manufacturers.

Plans, Specifications and Proposal Forms for the work, may be obtained from the Power Authority of the State of New York, at 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York upon application and prepayment of a fee of Ten ($10.00) dollars per initial set of contract documents, and Five ($5.00) dollars per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the maximum price bid for any bid schedule.

The right is reserved to reject any or all bids.

W. S. CHAPIN
PA-N-25002 GENERAL MANAGER

Bids: July 25th, 1957

Reconstruction & Repair of Steel Bridge

Sealed bids will be received until 4 p.m., Eastern Daylight Saving Time, July 25, 1957 in the Office of the City Clerk of Fulton, N. Y., for the reconstruction and repair of the Steel and Concrete sidewalks and other relevant construction on the Oneida Street, Steel deck truss highway bridge.

Bidding blanks, specifications and contract documents may be obtained from the City Clerk or City Engineer.

A deposit of $15.00 for plans and specifications and of $15.00 for each additional set of plans or specifications will be required. All deposits for plans and specifications will be refunded upon their return in good condition within 10 days of the opening of bids.

A certified check, Cashier's Check or Bank Officer's check for 5% of the total amount of the bid, made payable to the City of Fulton, New York, shall accompany each Proposal as evidence of good faith and responsibility of the Bidder. This check shall be retained by the Payee as liquidated damages should the Bidder refuse or fail to enter into a contract with the Payee for the execution of the work embraced in the Proposal, in the event the Proposal of the Bidder is accepted.

The Common Council reserves the right to reject all bids in whole or in part and to waive technical irregularities in bids received, if in the opinion of the Council or Officer in charge of making the contract the bid is too high.

By order of the Common Council of the City of Fulton, N. Y. Dated June 20, 1957.

Frank A. Campbell
City Clerk.

OFFICIAL PROPOSALS

Bids: July 18, 1957.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 18th day of July 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1, N. Y.						
Albany	FASS 57-8	South Bethlehem-Feura Bush Co. Rds. 53, 54 and 102 Project S-483(1)	4.14	Asphalt Concrete	$25,000 Plans $15	$421,000
Albany & Saratoga (Rte. 9)	FARC 57-126	Louden-Crescent, Pt. 2, S.H. 5614; Clifton Park-Crescent, Pt. 2, S.H. 5639. Project F-639(10)	0.44	Asphalt Concrete = 0.37 Mi.; Misc. Work = 0.07 Mi.; Welded Plate Girder 5 Spans 1135'	$190,000 Plans $15	3,523,000
Saratoga	FASSRC 57-160	Charlton-County Line, FAS-SS 38-8; Charlton-Ballston Center, FASS 48-15. Project S-59(3)	8.38	Asphalt Concrete	$15,000 Plans $10	283,000
Saratoga	PSC 6627 PSC 7027	Railroad Relocation and Elimination of Various D. and H. R.R. Grade Crossings in the City and Vicinity of Saratoga Springs	19.87	New Tracks, Buildings & Misc. R.R. Work = 11.61 Mi.; Cem. Conc. Pavt. = 1.48 Mi.; Asp. Conc. = 5.31 Mi.; R.O.B. Gravel Detours & Connections = 1.47 Mi.; 10 R.R. Sep. Structures & 1 Box Bridge	$400,000 Plans $100	7,055,000
Saratoga (Rte. 9P)	RC 57-123	Malta-Bemis Heights, Pt. 1, S.H. 1528	0.17	Asphalt Concrete	$2,500 Plans $10	43,000
DISTRICT No. 3, Wm. Robinson, District Engineer, Weigh Lock Building, 301 E. Water St., Syracuse, N. Y.						
Oswego (Rte. 57)	FARC 57-125	Fulton-Oswego, S.H. 5382 Project F-U-583(5)	7.20	9" Cem. Conc. Pavt. 24'-48' Wide Precast Concrete Slab Br. 36'	$95,000 Plans $15	1,750,000
DISTRICT No. 4, B. F. Perry, District Engineer, Barge Canal Terminal, Rochester 1, N. Y.						
Genesee (Rte. 19)	FARC 57-101	Le Roy-Brockport, Pt. 3, S.H. 1730 Project S-451(1)	2.88	Asphalt Concrete	$11,000 Plans $10	200,000
Livingston (Rtes. 5 & 20)	FARC 57-102	Avon-Lima, S.H. 5302 Project F-343(13)	2.67	Asphalt Concrete	$8,000 Plans $10	142,000
Monroe (Rte. 19)	FARC 57-104	Hamlin, Pt. 1, (Brockport-Hamlin), S.H. 80; Hamlin, Pt. 2, (Hamlin-N. Hamlin), S.H. 81. Project S-509(1)	4.21	Asphalt Concrete	$16,000 Plans $10	293,000
Wyoming (Rte. 20A)	FARC 57-105	Varysburg-Warsaw, Pt. 2, S.H. 1349A Project F-767(2)	1.67	Asphalt Concrete	$5,500 Plans $10	106,000
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, State Office Bldg., 65 Court St., Buffalo 2, N. Y.						
Chautauqua (Rte. 60)	FARC 57-106	Sinclairville-Casadaga, Pt. 2, S.H. 1012-1012A Casadaga-Fredonia, S.H. 938 Project F-111(14)	6.27 (1.83 Acc.)	Asphalt Concrete = 6.49 Mi.; 9" Cem. Conc. Pavt. 24' Wide = 1.24 Mi.; Misc. Work = 0.37 Mi.; Reinf. Conc. Arch Br. 68'	$122,000 Plans $25	2,206,000
Erie	FINTC 57-2	New York State Thruway—Niagara Section—Subs. N3 and N4 (Louisiana St. to Washington St.) Project I-865(15)	0.77	9" Cem. Conc. Pavt. 2 @ 37' Var. Wide = 0.72 Mi.; Misc. Work = 0.05 Mi.; 39 Span Comp. Beam Viaduct 2670'; 65 Reinf. Conc. Piers for Ramps	$600,000 Plans $100	10,007,000
Niagara	M 57-7	Bridge E-222 Over Erie Canal at Gasport		Reconstructing Control Cabin	$800 Plans $10	14,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee Street, Watertown, N. Y.						
Clinton & St. Lawrence	RC 57-108	Br. No. 1, S.H. 476; Br. No. 1, S.H. 5311; Br. No. 2, S.H. 777; Br. No. 2 and Br. No. 3, S.H. 1548; Br. No. 1, S.H. 1263; Br. No. 1, S.H. 8241 and Br. No. 2, S.H. 8199		Cleaning and Painting 8 Bridges	$1,300 Plans $10	23,000
St. Lawrence (Rte. 37A)	FARC 57-107	Ogdensburg-Waddington, S.H. 9357 Project F-650(6)	13.62	Asphalt Concrete, Ty. 1A	$23,000 Plans $10	430,000
DISTRICT No. 8, K. G. Rauer, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Columbia (Rte. 9)	FARC 57-109	Hudson-Stockport, S.H. 341 Project F-368(10)	2.47	Asphalt Concrete	$6,000 Plans $10	106,000
Columbia (Rte. 9)	FARC 57-110	Blue Stores-Livingston, S.H. 5004 Project F-322(14)	2.59	Asphalt Concrete	$7,000 Plans $10	134,000
Dutchess	FESS 57-9	Old Route 22 County Road No. 81 Project EE-67(1)	0.13	Repair Exist. 65.1' Bridge	$1,000 Plans $10	19,000
Dutchess (Rte. 22)	FARC 57-111	Millerton-County Line, S.H. 709 Project F-350(22)	1.39	Asphalt Concrete	$2,500 Plans $10	48,000
Dutchess (Rte. 9)	FARC 57-112	State Hospital, S.H. 9003; Poughkeepsie-Hyde Park, S.H. 453. Project F-322(15)	1.93	Asphalt Concrete	$6,000 Plans $10	105,000
Rockland (Rte. 59)	RC 57-113	Nyack Village: Main Street, S.H. 8459	0.06	Asphalt Concrete	$1,600 Plans $10	29,000
Ulster (Rte. 212)	RC 57-114	Willow-Mount Pleasant S.H. 1882	0.10	Slope Protection	$1,600 Plans $10	28,000
Westchester (Rte. 9)	FARC 57-115	Broadway-Irvington Village, S.H. 8456 Project F-682(7)	1.86	Asphalt Concrete	$5,300 Plans $10	94,000
Westchester (Rte. 9)	FARC 57-116	Broadway-North Tarrytown Village, S.H. 8457 Project F-682(6)	1.46	Asphalt Concrete	$4,000 Plans $10	75,000
Westchester (Rte. 100)	FARC 57-117	Yonkers-White Plains, S.H. 5231 Project F-243(3)	2.36	Asphalt Concrete	$8,000 Plans $10	154,000
Westchester (Rte. 22)	FARC 57-118	White Plains-Armonk, Pts. 1 and 2, S.H. 20 and S.H. 35 Project F-418(4)	2.84	Asphalt Concrete	$8,000 Plans $10	148,000
DISTRICT No. 9, J. C. Frederick, District Engineer, 71 Frederick Street, Binghamton, N. Y.						
Broome (Rte. 11)	FARC 57-119	Castle Creek-Whitney Point, S.H. 1450-A Project F-717(4)	3.66	Asphalt Concrete	$19,000 Plans $10	350,000
Broome (Rte. 17)	FARC 57-120	Binghamton-Windsor, Pt. 4, S.H. 5241; Windsor-Deposit, S.H. 5338. Project F-344(22)	4.27	Asphalt Concrete	$22,000 Plans $10	388,000
DISTRICT No. 10, M. E. Gould, District Engineer, 325 W. Main Street, Babylon, L. I., N. Y.						
Suffolk (Rte. 111)	RC 57-122	East Islip-Smithtown Branch, S.H. 1208	3.09	Asphalt Concrete	$10,000 Plans $10	180,000
Suffolk (Rte. 27)	RC 57-124	Center Moriches-Westhampton, S.H. 8039	0.57	Asphalt Concrete	$2,500 Plans $10	47,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

EMPLOYMENT OPPORTUNITIES

NATIONAL COVERAGE

The Advertisements in this section include all employment opportunities—executive, management, technical selling, office, skilled, manual, etc.

Positions Vacant | **Civil Service Opportunities . . .** | **Employment Agencies**
Positions Wanted | **Selling Opportunities Wanted** | **Employment Services**
Part Time Work | **Selling Opportunities Offered** | **Labor Bureaus**

DISPLAYED ——RATES—— **UNDISPLAYED**

The advertising rate is $31.80 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$2.10 per line, minimum 3 lines. To figure payment count 5 average words as a line.
Position Wanted ads are ½ of above.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS or inquiries to Classified Adv Div of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36, N. Y. July 18th Issue Closes July 8th

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Gunite Superintendent—Wanted immediately. Middle Atlantic States. State age, experience, availability, salary desired. P-4640, Engineering News-Record.

City Engineer: Registered professional engineer desired for City of approximately 18,000. Municipal experience desired, but not mandatory. Full details of education, experience and qualifications should be furnished. Contact Mayor, Fremont, Nebraska.

Civil Engineer with at least two years college training not over 35. Must have military training completed and interested in the building construction business, starting in the field. We offer opportunity for rapid advancement to ambitious, hard-working young men willing to accept responsibility. Starting salary $110.00 per week if unexperienced, with higher wages for those with some experience. Send complete history data. Martin K. Eby Construction Co., Inc., 610 N. Main, P.O. Box 1679, Wichita 5, Kansas.

Wanted: Graduate M.E. to supervise contractors shop, mechanics, field operation of equipment, purchasing; young man, broad experience preferred, N.Y. State area. Resume and salary requirement to P-5322, Engineering News-Record.

Civil Engineer, Experienced in Sewage Collection and Treatment, preliminary planning for housing projects and/or Roads and Streets. Will consider business interest, profit sharing, or, state minimum salary. Write: C. C. Jobe and Associates, P.O. Box 544, Merritt Island, Florida.

Engineer-Gunite, wanted immediately, must know estimating, take complete charge of all gunite operations. Executive position ultimately available. P-5355, Engineering News-Record.

Highway and Bridge Engineers, Designers, Draftsmen. Permanent positions. Well established and growing. (Location Southern Connecticut). Send resume of experience to: P-4969, Engineering News-Record.

Engineering graduates with experience in testing and control of concrete, asphalt and soils for permanent position in New England. Give full details of experience and education. State salary requirements. P-5295, Engineering News-Record.

Construction Man Wanted. Old well-known general construction and engineering firm operating in Central New York desires to negotiate mutually profitable agreement with a thoroughly qualified all-around construction man who is good at supervision, contracts, estimating, expediting etc. Must be around 35 years of age and a graduate civil engineer. P-5367, Engineering News-Record.

Sales Engineer—Precast Concrete Products. Sales to contractors, architects & engineers. New York City Area. Please include resume with first reply to. P-5382, Engineering News-Record.

City Engineer—Street Superintendent, Arcata, Calif., (pop 4720) Calif. Registration Required, Municipal experience preferred but not mandatory. Salary open. Attractive, challenging position in college town, modern schools, equable climate, progressive community. Apply City Engineer, City Hall, Arcata, Calif. List qualifications.

Assistant City Engineer, Arcata, Calif., Graduate Civil Engineer, Apply City Engineer, City Hall, Arcata, Calif. List qualifications.

POSITIONS VACANT

Wanted, experienced structural draftsman to supervise the work of six draftsmen, handle job correspondence, subcontracting of drawings, etc.; write stating qualifications and compensation desired. P-5393, Engineering News-Record.

Construction company in Springfield, Missouri, has an immediate opening for an experienced estimator. Principally engaged in earth-moving, sewers, and asphalt paving. Send resume and salary requirements. P-5499, Engineering News-Record.

Civil Engineer, recent graduate, for work with County Public Works Department. Work will include design of storm drainage systems, roads and streets, shore erosion control, culverts and small bridges. Fringe benefits. Salary commensurate with experience. Write Director of Public Works, Post Office Box 506, Annapolis, Maryland.

Opportunity: Building and Grounds Supervisor, growing Public School System, Long Island (40 miles from New York City). Act as resident engineer on new building projects; develop and supervise maintenance plan for all buildings and grounds including work up of specifications and purchasing of supplies and equipment. Engineering and/or architectural training plus experience in large plant construction and maintenance desirable. Retirement and other benefits. Now open. Permanent position for right man. State salary requirements. Replies should be addressed to: Dr. Charles T. Cowan, Superintendent of Schools, 235 Main Street, Northport, New York.

Chief-of-Party and Transitman for Engineering office located in Southern Virginia. Drafting experience desirable. Bonus arrangement and vacation schedule after proven ability. Excellent climate, ideal for one who wishes to remain active after retirement age. Give full details including salary and references first letter. P-5502, Engineering News-Record.

Field Engineer—Position of Assistant Resident Engineer on large steam electric station construction open for Civil Engineer. Several years experience on similar work desirable. Location Midwest. Send resume of education, experience, with references and salary requirements. Pioneer Service & Engineering Co., 231 So. LaSalle St., Chicago 4, Ill.

Instructors for civil engineering department starting September 1, 1957; bachelor's degree preferred, so that specialization may fit instructor and departmental needs. Salary $4050 for nine months. Extra work for consultants permitted and encouraged. Graduate courses may be taken. Location, Mississippi. P-5495, Engineering News-Record.

Beginning Civil Engineer—Recent graduate. Mount Clemens, Michigan. Near Lake St. Clair. 20 miles Northeast of Detroit. Annual salary $5,122-$5,902. P-5509, Engineering News-Record.

Teaching—Increased enrollment requires new staff members as instructor to associate professor level to teach Structures, Fluid Mechanics, Mechanics and Strength of Materials. Opportunities to participate in contract research. Also opportunity for advanced degree for instructors. Head Civil Engineering Department, University of Tennessee, Knoxville, Tennessee.

Excellent opportunity in Consulting Engineer's office for competent engineer experienced in design and inspection of water and sewage systems, water and sewage treatment plants, estimates, reports. State education, age, experience, salary required and when could report. Correspondence confidential, P-5461, Engineering News-Record.

POSITIONS VACANT

Inspectors—Civil, Mech & Electrical. Overseas Airbase Construction. Please send detailed resume to: P-5463, Engineering News-Record.

Sales engineer estimator, structural background, to promote, redesign and negotiate sub-contract gypsum and creteplank roof systems, Western Pa., N.E. Ohio area. Write Martin Fireproofing Corporation, 2200 Military Road, Buffalo 17, New York.

Wanted—Experienced concrete paving superintendent for work in Kansas and surrounding area with Wichita, Kansas headquarters. Martin K. Eby Construction Co. Inc., P. O. Box 1679, Wichita, Kansas.

Design Supervisors—Midwestern consulting engineer has positions for three experienced designers: in sanitary engineering, in highway engineering, in structural engineering, also an experienced land and construction surveyor. Should be registered men or at least eligible, with six to ten years experience. Rapidly growing organization in a medium sized city. No traveling. This notice will not reappear. P-5482, Engineering News-Record.

Inspectors—Concrete, Soils & Asphalt, Lab & Field. For Overseas Airbase Construction. Temperate Climate. Please send detailed resume. P-5483, Engineering News-Record.

Wanted: Civil Engineer to assist Chief Engineer in designing and estimating and overseeing of building construction, mostly industrial. Northeast Constructors Inc., 8 Church Street, Gouverneur, N. Y. Contact John W. Rouse, President.

Accountant—and Office Manager capable of taking full charge of bookkeeping department of highway and bridge construction company. Exceptional opportunity for capable man. Grandview Construction Corp., 740 S. Fulton Ave., Mt. Vernon, N. Y.

EMPLOYMENT SERVICE

Salaried personnel, $5,000-$30,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L. P. O. Box 674, Manchester, Vermont.

POSITIONS WANTED

Construction or Project Manager, capable executive. 27 years experience from field superintendent to Foreign Resident Manager. All types multi-million dollar construction, foreign and domestic. Contract negotiations, estimating, purchasing, labor and public relations. Spanish, German, French Portuguese. Seeking a permanent assignment but would consider challenging term contract in Europe, Latin-America or USA. PW-5275, Engineering News-Record.

B.C.E. 1951. Experience on highway and airport construction. Seek position with general contractor or engineer. PW-5358, Engineering News-Record.

Civil Engineer, Registered, 29, now asst. to head of Bridge Dept. in consult. firm, cost-conscious & alert, seeks interesting & responsible pson., pref. large East Coast city. Exp. in prestressed concr. as well as steel desn. PW-5371, Engineering News-Record.

Construction Engineer—Experienced 25 years Management, bidding, supervising, purchasing and negotiating for successful general contractors on building and heavy construction. Available soon. Western location preferred. PW-5370, Engineering News-Record.

Structural Engineer with good theoretical background.—Age 31—Master degree. Six years experience in design of harbour and coastal constructions (piers, jetties, energy absorbing fenders, storage sheds etc.). Able to calculate waveforces on structures and to design shell roofs. Experience in S. America in a responsible position. PW-5486, Engineering News-Record.

C. E. Draftsman. 8 yrs. exp. designing-detailing Sewage Treatment Plants, Pumping Stations, Sewer Supervision. Married, interested in relocating with consulting engineer. References. PW-5484, Engineering News-Record.

C. E., 7 yrs. heavy and building construction experience. Field and office engineering. Estimating experience, handle bids, architects, all trades. Construction in permanent location or Plant Engineering. PW-5457, Engineering News-Record.

(Continued on opposite page)

ARCHITECTURAL ENGINEER

Architectural Engineer between ages of 25 and 35 with interest in design of industrial buildings and structures.

Excellent opportunity with consulting engineering firm in Middle West. Liberal benefit plans and good working conditions.

Send resume of education and experience with statement of salary requirements to:

P-3222, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

ENGINEERING POSITIONS OPEN

Location—Mid-Illinois or Denver, Colorado

DESIGN ENGINEERS—4
SURVEY CHIEFS—2
INSTRUMENT MEN—2
***Salary*: $5540-$13,800**
Plus

1) Eligibility to profit sharing after 12 months
2) Vacation and sick leave
3) Allowance for moving

SEND:

1) Education
2) Experience
3) References
4) Salary Required

P-5403, Engineering News-Record,
520 N. Michigan Ave., Chicago 11, Ill.

WANTED
MECHANICAL ENGINEER

Minimum ten years experience including design of dredges and auxiliary equipment. Established contractor. Midwest location. Write full particulars.

P-5410, Engineering News-Record,
520 N. Michigan Ave., Chicago 11, Ill.

POSITIONS WANTED
Continued from opposite page

Grout inspector. Full chgr. Exper. 8 dams avail. July. Prefer W. Coast or Foreign. PW-5458, Engineering News-Record.

Contractor's assistant, competent estimator-job manager, graduate engineer, 31, seeks position as No. 2 man with medium size building contractor. Prefer southeast but will consider relocating. PW-5459, Engineering News-Record.

Building Construction Superintendent: Industrial, Commercial, Institutional, etc.,—Desires position as field supt; not an estimator. Over 25 years experience. Age 55; Prefer Eastern States. Can travel with reliable contractor or as Architects representative. PW-5491, Engineering News-Record.

Contractors executive: sound experience. All phases hvy type construction. $10,000-$12,000. Phila. area only. Presently employed. PW-5496, Engineering News-Record.

Sewer foreman, middle age, Italian, experienced, able, attentive and honest; would like to join a conscientious sewer contractor for permanent position with the guaranty of satisfactory results in installing well point system, shoring, tunneling, rock blasting and any other phase of sewer work that required ability and experience. Will consider small job as well as large project. PW-5498, Engineering News-Record.

Electrical Construction Superintendent available Sept. 1. Twenty-five years heavy industrial construction experience, including aircraft plant construction. Location near Santa Anna, Calif. desired. Excellent references. PW-5501, Engineering News-Record.

BSCE, 28, married, desires responsible position in gen. C.E.; pref. field. 3½ yrs. exp. in heavy industrial const. & highway design & const. Wish to locate in W. Va., Va. or Tenn. area. PW-5500, Engineering News-Record.

Project Manager—Grad. CE; Reg. PE; age 32; Vet.; 8 yrs of intensified experience including field engr., estimator, purchasing, supervision and management of Gen. Bldg. Constr. Excellent record of successfully completed projects. Seeking position leading to top management or ownership participation. PW-5506, Engineering News-Record.

CIVIL ENGINEERS
DESIGNERS DETAILERS

ATTRACTIVE POSITIONS ARE AVAILABLE FOR QUALIFIED MEN WHO WILL ACCEPT RESPONSIBILITY AND WISH TO MAKE A CAREER IN DESIGN OF HIGHWAYS, EXPRESSWAYS AND ALLIED CIVIL ENGINEERING WORK. THERE IS AMPLE OPPORTUNITY FOR PROFESSIONAL ADVANCEMENT BASED UPON MERIT. SALARIES ARE REVIEWED AT REGULAR INTERVALS. PAID VACATIONS, SICK LEAVE AND MOVING ALLOWANCE. EXCELLENT RETIREMENT AND BENEFIT AND HOSPITALIZATION PLANS.

OVERSEAS OPENINGS FOR GRADUATE CIVIL ENGINEERS WITH SEVERAL YEARS HIGHWAY ENGINEERING EXPERIENCE.

WRITE FULLY TO

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Excellent opportunities for experienced men having ability to produce professional work on schedule. Employee benefits. Salaries commensurate with qualifications. Please send detailed educational and experience resume plus availability.

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227 Pine St. Harrisburg, Pa.

HIGHWAY ENGINEER

California Civil Engineering Registration or ability to secure registration required. Applicants must have from 5-10 years of supervisory and administrative experience in all phases of highway construction including design, material testing, specification writing and field engineering. Applicants must be capable of assuming full charge of surveying, design and construction of County Highways.

No written examination is required.
Starting salary $700.00 per month.

Ideal living conditions in small foothill city with Junior College, and easy access to city and Sierras.

State age, resume of experience and availability in first letter to Road Commissioner, County of Placer, Auburn, California.

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For a $40 million rockfill and concrete dam in Iraq. Two-year contract; approximately 1-year completion schedule. Family housing at site, but no local educational facilities for children. Fill type dam construction experience required—preferably rockfill. Must be fully capable of assuming duties of Resident Engineer as required. Position is available immediately. Excellent salary. Please send complete personal and experience record to Hugo O. Niemi, Personnel Manager.

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Rapidly growing company planning further expansion offers positions in design and development of steel products for building and highway construction industry. Three years experience in building industry preferred. Excellent working and living conditions, with liberal salary, bonus, and fringe benefits. Company offers opportunity for personal and professional growth; also provides stability of major steel producer. Please forward resume, including experience, education, and salary requirements to:

Mr. R. E. Lee, Director of Engineering
Granco Steel Products Company
Subsidiary Granite City Steel Company
6506 North Broadway
St. Louis 15, Missouri

CIVIL ENGINEER

Young civil engineer interested in broad application of civil engineering.

Excellent opportunity with consulting firm. Liberal benefit plans and good working conditions. Location Middle West.

Send resume of education and experience with salary requirements to:

P-3223, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

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Interesting and challenging permanent assignments. Attractive salaries and liberal employee benefits, including free use of swimming pool and golf club for employees and families.

Write or telephone for application blank. All replies will be held confidential.

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Career opportunities for men interested in professional recognition.
Excellent working conditions and employee benefits including liberal retirement program.
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Air Mail Resume TO R. L. SHAW, Personnel Director

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BAKER BLDG. *Consulting Engineers* ROCHESTER, PA.

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Several Openings For Designers, Draftsman and Detailers

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Mature Man With Minimum of 10 Years Experiencee in Concrete & Materials

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Generous Annual and Sick Leave, Hospitalization, Group Insurance, Profit Sharing.

PLEASE WRITE OR CONTACT

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ASSISTANT TRAFFIC ENGINEER

For Traffic Engineering Department recently established. Salary range $622 to $691 a month with maximum salary obtainable through annual and longevity increases. Registration as a professional engineer required. No residence restrictions for U. S. citizens to begin work. Wisconsin Retirement Fund and Social Security Benefits.

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Long established firm of consulting engineers with world-wide practice needs both beginners and experienced civil, electrical, mechanical and foundation engineers for interesting work on large dams, powerplants, and river control works. Permanent positions. Liberal employee benefits. Starting salaries dependent on qualifications. Please send complete resume to Hugo Niemi, Personnel Manager.

HARZA ENGINEERING CO.

400 W. Madison St. Chicago 6, Ill.

CONSTRUCTION SUPT.

About 40—Experienced in water, gas, electric and telephone construction—A small contracting company needs man to handle expanding forces in New Jersey and New York. Kindly reply to:

P-5328, Engineering News-Record, Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

ENGINEERS

There's Opportunity on Beautiful Gulf Coast

Immediate openings for:

CHIEF STRUCTURAL ENGINEER
New Orleans office—experienced in highway bridge design.

CHIEF HIGHWAY ENGINEER
New Orleans—preferably experienced in urban design.

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DRAINAGE ENGINEERS
HIGHWAY ENGINEERS
DRAFTSMEN—HIGHWAY AND STRUCTURAL
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Company paid hospitalization, life insurance and retirement. 40-hour week. Air-conditioned offices. Liberal salaries. Permanent position. Excellent opportunities for advancement. Send complete resume of education and experience with salary requirement to:

PALMER and BAKER, Inc.
P. O. Box 346 Mobile, Ala.

EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

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Dirt . . . Paving . . . Bridges . . .

Long Established, Reputable New York State Thruway Contractor wants the best man available for project construction superintendent. Applicant must present complete record of past experience. Record must prove ability to assume full responsibilities for all types earth moving, concrete and asphalt paving, structures and heavy equipment. Work area principally but not confined to New York and adjacent states. Travel is required. Salary, future, etc., excellent for right man. Interviews granted only after study of record and references. Company requirement is high quality work performed profitably. What are your requirements.

P-5351, Engineering News-Record, Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

HIGHWAY ENGINEER

Highway Engineer with 8 to 12 years experience in design and administration. Must be able to assume heavy responsibility. Excellent opportunity with established consulting engineering firm in Middle West. Must be registered.

P-4635, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

CONTRACT WORK WANTED

Professional Engineer—Land Surveying office desires Highway, Bridge, sub-contract work. CWW-5487, Engineering News-Record.

BOOKS AND PERIODICALS

Highway and Railway Bridges with Simple and Continuous Spans, 32p. booklet, by A. A. Eremin, 1541-37 St., Sacramento, 16, California, $4PP.

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REDUCTION GEAR
1—Used 1900 RPM Input 24 RPM Output 200 HP Reduction Gear with or without built in thrust bearing for hydraulic dredge cutter drive. Call Purchasing Agent
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FOR SALE
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MODEL 3000B AND 3500
FORSYTHE EQUIPMENT CO., INC.
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Two (200) pcs. H BEAMS (BP)
57 lbs., 45 to 65 ft. long
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Built By R. W. Kaltenbach Corp.
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13 Foot Tower, Boom 70 ft.
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Brand new
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Built 1952, ser. 7AH1580, 80' boom, & jib, independent booming, power lowering on front drum. 140GK Waukesha in factory carrier. Price: $26,-500.00.
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Model 36TD's. Quarry Bodies. 2 Yd. Top Extensions. Cummins 300 H.P. Turbo Charged Engines. New Late 1956. Used Only 4 Months. Excellent Condition. Unusual Savings of Approximately ⅓ If Purchased. Offered Subject to Prior Disposition.
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40' boom, Rudomatic Tagline, outriggers, screw jacks. Mtd. on factory carrier. 1950 machine—has had excellent care.
$18,000.00
Subj. to inspect. & prior sale.
Call CYpress 2-4800
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75 ft. of 8 ft. 6" diam. full circle telescopic steel forms by Mayo, with 3 travellers—used once.
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3 #2 AMERICAN TERRY—STEEL ERECTORS GUY DERRICKS 110' Booms—100' Masts—5-part Boom and Load Blocks. Rated 10-ton @ 98' radius; 20-ton @ 50' radius.

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Slightly Used
80D Northwest Double Stick Shovel Attachment
Excellent Condition
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10,000' 9" x 9" road forms
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Learn how to figure labor, material costs on construction jobs. Write for 30 day free trial. CONTRACTOR'S SCHOOL, Box 12, Dallas, Tex.

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Covering Entire City Block at
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6000 TONS

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1. New and unused Koehring 304 three-quarter yard shovel attachment. 18-foot boom, 15-foot dipper stick. Removed from C-8890. (Today's factory price—over $5,000.00) $2,000.00
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MOTOR SCRAPERS
Five ALLIS CHALMERS
MODEL TS-300

18 yd. Capacity. 4-24:00x29-24 ply tires. Powered by Cummins Diesel Engines.
Good Condition - Good Rubber
$12,000.00 each
Subj. to inspect. & prior sale.
Call CYpress 2-4800
H. O. PENN MACHINERY CO. INC.
140th St. & E. River, N. Y. 54, N. Y.

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NEW and RELAYING

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PILE SECTIONS
NEW · USED · IN STOCK

8"	BP	36#
10"	BP	42#
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14"	BP	89#
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We assure you our prices will be the best obtainable.

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Select Portables

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(Additional Searchlight Advertising on page 98)

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Cards arranged by areas, states, cities, names

Additional cards on following pages

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Washington 6, D. C.
Phone: REpublic 7-8131

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Civil, Mechanical, Electrical

220 E Pleasant St., Baltimore, Md.
Pittsburgh, Pa. Boston, Mass.

Penniman & Browne, Inc.

Engineering Division

Soils Engineering—Test Borings Load Testing—Asphalt & Concrete Design—Field and Plant Control Steel Inspection—Mobile X-Ray
341 St. Paul Place, Baltimore 2, Md.

Whitman, Requardt & Associates

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Mechanical—Electrical
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1304 St. Paul St., Baltimore 2, Md.

Maddox and Hopkins

Engineers and Surveyors

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Topographic Maps - Photogrammetry

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Engineers and Constructors

For modern, efficient, design and erection, commercial and industrial, reinforced concrete, structural steel and timber. Complete projects, from inception to completion, based on 25 years continuous successful experience.

Main office 248 Main street, Fort Lee, New Jersey. Telephone Windsor 4-7864.

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Echo From Hells Canyon

THE NOISE IN CONGRESS over the defunct Hells Canyon high dam should not be expected to quiet the construction noises already reverberating in the canyon itself from actual work on the two medium high dams, Brownlee and Oxbow. It would seem only that public power Senators, and some others temporarily and tenuously embracing that dogma, wanted to impress some constituents with their ardor. Whether or not the House follows the Senate in passing a high dam bill, the President is almost certain to kill it with a veto. To do otherwise would be to repudiate the Administration principle of avoiding federal participation in river development projects that private enterprise or the states and their agencies are willing and able to undertake.

As has been stated in these pages before (ENR Dec. 20, 1956, p. 92), a high dam could have been built in Hells Canyon if the federal government had had a workable mechanism for instituting a true partnership arrangement with private utilities, and if the public power advocates had been willing to accept something less than full government ownership and operation. A high dam would have furnished more water storage, which would have been an advantage. Contrariwise, however, it would have cost the taxpayers more, and it would have delayed the time when power could have been provided to the kilowatt-hungry Northwest.

In any event, the Federal Power Commission granted the Idaho Power Co. a license to develop the Hells Canyon head with a series of medium high dams, and some millions of dollars have already been spent on them. The high dam idea is dead, and what is heard now is only the echo from the sound and fury which killed it.

Nor should it be overlooked that to scuttle the work already done in Hells Canyon, as the bill passed by the Senate is designed to do, would cost the federal government and its taxpayers a sizeable sum. How the public power advocates, who invariably represent themselves as the taxpayers' champion, can urge such action is not quite clear. Perhaps when one is hellbent on public power, Hells Canyon development costs are not really the prime consideration. The action in the Senate must, at least, raise that suspicion.

Subsidies for Commuters

THE GROWING SERIOUSNESS of the rapid-transit situation in all metropolitan regions has been re-emphasized recently by almost simultaneous proposals to subsidize rapid-transit systems in such outstanding locations as Chicago and New York (ENR May 23, p. 28 and May 30, p. 24).

Not many years ago the idea of subsidies for rapid transit would have been ridiculed as preposterous. Rapid transit lines were expected to be self-supporting. As a matter of fact, the privately owned commuting lines, generally, were heavily taxed to help pay the cost of government in the regions they served.

Now, in the latest subsidy proposal—that for the New York-New Jersey metropolitan area—the regions served would be taxed to make up an anticipated annual operating deficit on a modernized and enlarged rapid-transit system. Other signs of the changed times are the recent applications by railroads in the New York-New Jersey area for permission to curtail or abandon commuting service on some lines because of the heavy loss involved in continued operation of that service even under the higher fares authorized in recent years.

The subsidy proposed for the New York-New Jersey modernization work would be a property tax placed on New York City and the counties in New Jersey served by the commuting railroads that would be connected with the projected rapid-transit belt line built to tie in with New York City's subway system.

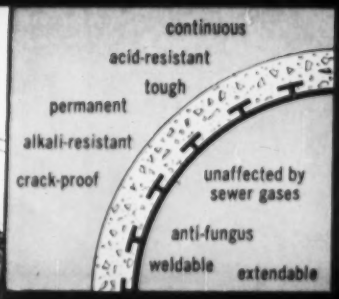
In Illinois, it is proposed to use part of the state's income from gasoline taxes to aid the Chicago Transit Authority. Also, the authority would be relieved of certain taxes it now pays.

What these proposals emphasize is the hard fact that the commuting services in our big metropolitan regions have been supported for a long time out of the freight income of the railroads that operate them. Thus, in effect, they are already subsidized. The only change has been that the railroads have tried to correct the situation by sharp increases in commuting fares.

It has now become obvious that this kind of an approach is doomed to failure. To attempt to put the commuting services on a paying basis by further fare increases will only force more commuters to use private cars or bus lines. Some form of public subsidy seems the only answer.

Selling the subsidy, however, to members of the legislatures of the states directly concerned is going to be a difficult task. Property taxpayers in New York and New Jersey can be expected to be loud in their protests over any addition to their already heavy tax burden. This will be especially true of taxpayers who do not benefit directly from the commuting services that are to be subsidized. And in Illinois, the highway users and industries that benefit from highway work can be expected to raise strong protest against diverting any highway money to the rapid transit lines. This will be true even though there is logic in the argument that improved mass-transportation facilities in the Chicago area will reduce congestion on highways serving the city.

Proponents of any subsidy plan will need to marshal every possible argument if they are to succeed. And the strongest argument is, of course, the fact that continuing traffic congestion from motor vehicles menaces the growth and prosperity of every metropolitan region.



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